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 Gerritsen, Mary E.
 Goddard, Audrey
 Godowski, Paul J.
 Grimaldi, J. Christopher
 Gurney, Austin L.
 Hillan, Kenneth J
 Kljavin, Ivar J.
 Kuo, Sophia S.
 Napier, Mary A.
 Pan, James;
 Paoni, Nicholas F.
 Roy, Margaret Ann
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Glu | Met | Leu | Ala | Ser | Tyr | Gly | Leu | Ala | Tyr | Ser | Leu | Met | Lys |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| 50 | | | | | | | | | | 55 | | | | | 60 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Phe | Phe | Thr | Gly | Pro | Met | Ser | Asp | Phe | Lys | Asn | Val | Gly | Leu | Val | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Phe | Val | Asn | Ser | Lys | Arg | Asp | Arg | Thr | Lys | Ala | Val | Leu | Cys | Met | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Val | Val | Ala | Gly | Ala | Ile | Ala | Ala | Val | Phe | His | Thr | Leu | Ile | Ala | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Tyr | Ser | Asp | Leu | Gly | Tyr | Tyr | Ile | Ile | Asn | Lys | Leu | His | His | Val | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Asp | Glu | Ser | Val | Gly | Ser | Lys | Thr | Arg | Arg | Ala | Phe | Leu | Tyr | Leu | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Ala | Ala | Phe | Pro | Phe | Met | Asp | Ala | Met | Ala | Trp | Thr | His | Ala | Gly | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Ile | Leu | Leu | Lys | His | Lys | Tyr | Ser | Phe | Leu | Val | Gly | Cys | Ala | Ser | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Ile | Ser | Asp | Val | Ile | Ala | Gln | Val | Val | Phe | Val | Ala | Ile | Leu | Leu | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| His | Ser | His | Leu | Glu | Cys | Arg | Glu | Pro | Leu | Leu | Ile | Pro | Ile | Leu | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Ser | Leu | Tyr | Met | Gly | Ala | Leu | Val | Arg | Cys | Thr | Thr | Leu | Cys | Leu | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Gly | Tyr | Tyr | Lys | Asn | Ile | His | Asp | Ile | Ile | Pro | Asp | Arg | Ser | Gly | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Pro | Glu | Leu | Gly | Gly | Asp | Ala | Thr | Ile | Arg | Lys | Met | Leu | Ser | Phe | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Trp | Trp | Pro | Leu | Ala | Leu | Ile | Leu | Ala | Thr | Gln | Arg | Ile | Ser | Arg | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Pro | Ile | Val | Asn | Leu | Phe | Val | Ser | Arg | Asp | Leu | Gly | Gly | Ser | Ser | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ala | Ala | Thr | Glu | Ala | Val | Ala | Ile | Leu | Thr | Ala | Thr | Tyr | Pro | Val | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Gly | His | Met | Pro | Tyr | Gly | Trp | Leu | Thr | Glu | Ile | Arg | Ala | Val | Tyr | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Pro | Ala | Phe | Asp | Lys | Asn | Asn | Pro | Ser | Asn | Lys | Leu | Val | Ser | Thr | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Ser | Asn | Thr | Val | Thr | Ala | Ala | His | Ile | Lys | Lys | Phe | Thr | Phe | Val | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Cys | Met | Ala | Leu | Ser | Leu | Thr | Leu | Cys | Phe | Val | Met | Phe | Trp | Thr | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |

| | | |
|-----------------|---------------------|-------------------------|
| Pro Asn Val Ser | Glu Lys Ile Leu Ile | Asp Ile Ile Gly Val Asp |
| | 350 | 355 360 |
| Phe Ala Phe Ala | Glu Leu Cys Val Val | Pro Leu Arg Ile Phe Ser |
| | 365 | 370 375 |
| Phe Phe Pro Val | Pro Val Thr Val Arg | Ala His Leu Thr Gly Trp |
| | 380 | 385 390 |
| Leu Met Thr Leu | Lys Lys Thr Phe Val | Leu Ala Pro Ser Ser Val |
| | 395 | 400 405 |
| Leu Arg Ile Ile | Val Leu Ile Ala Ser | Leu Val Val Leu Pro Tyr |
| | 410 | 415 420 |
| Leu Gly Val His | Gly Ala Thr Leu Gly | Val Gly Ser Leu Leu Ala |
| | 425 | 430 435 |
| Gly Phe Val Gly | Glu Ser Thr Met Val | Ala Ile Ala Ala Cys Tyr |
| | 440 | 445 450 |
| Val Tyr Arg Lys | Gln Lys Lys Lys Met | Glu Asn Glu Ser Ala Thr |
| | 455 | 460 465 |
| Glu Gly Glu Asp | Ser Ala Met Thr Asp | Met Pro Pro Thr Glu Glu |
| | 470 | 475 480 |
| Val Thr Asp Ile | Val Glu Met Arg Glu | Glu Asn Glu |
| | 485 | 490 |

<210> 8
 <211> 535
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> unsure
 <222> 33, 66, 96, 387
 <223> unknown base

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 tgagcttctg gtgccttttg gctctaattc tggccacaca gagaancagt 100
 cggcctattg tcaacctctt tgtttcccg gaccttggtg gcagttctgc 150
 agccacagag gcagtggcga ttttgacagc cacataccct gtgggtcaca 200
 tgccatacgg ctggttgacg gaaatccgtg ctgtgtatcc tgctttcgac 250
 aagaataacc ccagcaacaa actggtgagc acgagcaaca cagtcacggc 300
 ggccacatc aagaagttca ccttcgtctg catggctctg tcaactcacgc 350
 tctgtttcgt gatgttttgg acaccaacg tgtctgngaa aatcttgata 400
 gacatcatcg gagtggactt tgcctttgca gaactctgtg ttgttccttt 450

gcgggatcttc tcctttcttcc cagttccagt cacagtgagg gcgcattctca 500

ccgggtggct gatgacactg aagaaaacct tcgtc 535

<210> 9

<211> 434

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 32, 54, 80, 111, 117, 122, 139, 193, 205, 221, 226, 228, 273,
293, 296, 305, 336, 358, 361

<223> unknown base

<400> 9

tgacggaatc ccgggctggg tatcctgggt tngacaagat aaacccccag 50

caanaaattg gggagcaggg caaaacagtn acgggcagcc cacatcaaga 100

agttcacctt ngtttgnatg gntctgtcaa ctacgctnt gtttcgtgat 150

gttttggaca cccaaagtgt ttgagaaaat tttgatagac atnatcggag 200

tggantttgc ctttgcagaa ntttgnngtg ttcctttgcg gattttctcc 250

tttttcccag ttccagtcac agngagggcg catctcaccg ggnggntgat 300

gacantgaag aaaacctttg tccttgcccc cagctntttg gtgcggatca 350

ttgtcctnat ngccagcctt gtggtcctac cctacctggg ggtgcacggt 400

gcgacctg gcgtgggttc cctcctggcg ggca 434

<210> 10

<211> 154

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 33, 49, 68, 83, 90, 98, 119

<223> unknown base

<400> 10

tattccagat tccggtcacg gggagggcgc atntcaccgg gtggctgang 50

acactgaaga aaaccttngt ccttgcccc agntttgtgn tgcggatnat 100

cgtcctcatc gccagcctng tggtoctacc ctacctgggg gtgcacggtg 150

agac 154

<210> 11

<211> 24

<212> DNA

<213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

 <400> 11
 ctgatccggt tcttggtgcc cctg 24

 <210> 12
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 12
 gctctgtcac tcacgctc 18

 <210> 13
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 13
 tcatctcttc cctctccc 18

 <210> 14
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 14
 ccttcgcca cggagtgc 18

 <210> 15
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 15
 ggcaaagtcc actccgatga tgtc 24

 <210> 16
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

<400> 16
gcctgctgtg gtcacaggtc tccg 24

<210> 17
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 17
tcggggagca ggccttgaac cggggcattg ctgctgtcaa ggagg 45

<210> 18
<211> 1901
<212> DNA
<213> Homo sapiens

<400> 18
gccccgcgcc cggcgccggg cgcccgaagc cgggagccac cgccatgggg 50
gcctgcctgg gagcctgctc cctgctcagc tgcgcgtcct gcctctgcgg 100
ctctgcccc tgcatcctgt gcagctgctg ccccgccagc cgcaactcca 150
ccgtgagccg cctcatcttc acgttcttcc tcttcctggg ggtgctggtg 200
tccatcatta tgctgagccc gggcgtggag agtcagctct acaagctgcc 250
ctgggtgtgt gaggaggggg cgggatccc caccgtcctg cagggccaca 300
tcgactgtgg ctccctgctt ggctaccgag ctgtctaccg catgtgcttc 350
gccacggcgg ccttcttctt cttctttttc accctgctca tgctctgcgt 400
gagcagcagc cgggaccccc gggctgccat ccagaatggg ttttggttct 450
ttaagttcct gatcctggtg ggcctcaccg tgggtgcctt ctacatccct 500
gacggctcct tcaccaacat ctggttctac ttggcgctcg tgggctcctt 550
cctcttcac ctcattcagc tgggtgctgct catcgacttt gcgcactcct 600
ggaaccagcg gtggctgggc aaggccgagg agtgcgattc ccgtgcctgg 650
tacgcaggcc tcttcttctt cactctcttc ttctacttgc tgtcgatcgc 700
ggcgtggcg ctgatgttca tgtactacac tgagcccagc ggctgccacg 750
agggcaaggc cttcatcagc ctcaacctca cttctgtgt ctgcgtgtcc 800
atcgctgctg tctgccccaa ggtccaggac gccagccca actcgggtct 850
gctgcaggcc tcggatcatc ccctctacac catgtttgtc acctggtcag 900
ccctatccag tatccctgaa cagaaatgca accccattt gccaacccag 950

ctgggcaacg agacagttgt ggcaggcccc gagggctatg agacccagtg 1000
gtgggatgcc ccgagcattg tgggcctcat catcttcctc ctgtgcaccc 1050
tcttcatcag tctgcgctcc tcagaccacc ggcagggtgaa cagcctgatg 1100
cagaccgagg agtgcacacc tatgctagac gccacacagc agcagcagca 1150
gcagggtggca gcctgtgagg gccgggcctt tgacaacgag caggacggcg 1200
tcacctacag ctactccttc ttccacttct gcctgggtgct ggctcactg 1250
cacgtcatga tgacgctcac caactggtac aagcccgggtg agacccggaa 1300
gatgatcagc acgtggaccg ccgtgtgggt gaagatctgt gccagctggg 1350
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aaccgcgact tcagctgagg cagcctcaca gcctgccatc tggtgccctc 1450
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caccaatcag ccaggctgag cccccacccc tgccccagct ccaggacctg 1550
cccctgagcc gggccttcta gtcgtagtgc cttcagggtc cgaggagcat 1600
caggctcctg cagagcccca tcccccgcc acaccacac ggtggagctg 1650
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ggggaactcc caccacagtg gggcatccgg cactgaagcc ctggtgttcc 1800
tggtcacgtc cccagggga cctgcccc ttctggact tcgtgcctta 1850
ctgagtctct aagacttttt ctaataaaca agccagtgcg tgtaaaaaaa 1900
a 1901

<210> 19

<211> 457

<212> PRT

<213> Homo sapiens

<400> 19

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Cys | Leu | Gly | Ala | Cys | Ser | Leu | Leu | Ser | Cys | Ala | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Cys | Leu | Cys | Gly | Ser | Ala | Pro | Cys | Ile | Leu | Cys | Ser | Cys | Cys | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Ser | Arg | Asn | Ser | Thr | Val | Ser | Arg | Leu | Ile | Phe | Thr | Phe | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Phe | Leu | Gly | Val | Leu | Val | Ser | Ile | Ile | Met | Leu | Ser | Pro | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Val | Glu | Ser | Gln | Leu | Tyr | Lys | Leu | Pro | Trp | Val | Cys | Glu | Glu | Gly | | 65 | 70 | 75 |
| Ala | Gly | Ile | Pro | Thr | Val | Leu | Gln | Gly | His | Ile | Asp | Cys | Gly | Ser | | 80 | 85 | 90 |
| Leu | Leu | Gly | Tyr | Arg | Ala | Val | Tyr | Arg | Met | Cys | Phe | Ala | Thr | Ala | | 95 | 100 | 105 |
| Ala | Phe | Phe | Phe | Phe | Phe | Phe | Thr | Leu | Leu | Met | Leu | Cys | Val | Ser | | 110 | 115 | 120 |
| Ser | Ser | Arg | Asp | Pro | Arg | Ala | Ala | Ile | Gln | Asn | Gly | Phe | Trp | Phe | | 125 | 130 | 135 |
| Phe | Lys | Phe | Leu | Ile | Leu | Val | Gly | Leu | Thr | Val | Gly | Ala | Phe | Tyr | | 140 | 145 | 150 |
| Ile | Pro | Asp | Gly | Ser | Phe | Thr | Asn | Ile | Trp | Phe | Tyr | Phe | Gly | Val | | 155 | 160 | 165 |
| Val | Gly | Ser | Phe | Leu | Phe | Ile | Leu | Ile | Gln | Leu | Val | Leu | Leu | Ile | | 170 | 175 | 180 |
| Asp | Phe | Ala | His | Ser | Trp | Asn | Gln | Arg | Trp | Leu | Gly | Lys | Ala | Glu | | 185 | 190 | 195 |
| Glu | Cys | Asp | Ser | Arg | Ala | Trp | Tyr | Ala | Gly | Leu | Phe | Phe | Phe | Thr | | 200 | 205 | 210 |
| Leu | Leu | Phe | Tyr | Leu | Leu | Ser | Ile | Ala | Ala | Val | Ala | Leu | Met | Phe | | 215 | 220 | 225 |
| Met | Tyr | Tyr | Thr | Glu | Pro | Ser | Gly | Cys | His | Glu | Gly | Lys | Val | Phe | | 230 | 235 | 240 |
| Ile | Ser | Leu | Asn | Leu | Thr | Phe | Cys | Val | Cys | Val | Ser | Ile | Ala | Ala | | 245 | 250 | 255 |
| Val | Leu | Pro | Lys | Val | Gln | Asp | Ala | Gln | Pro | Asn | Ser | Gly | Leu | Leu | | 260 | 265 | 270 |
| Gln | Ala | Ser | Val | Ile | Thr | Leu | Tyr | Thr | Met | Phe | Val | Thr | Trp | Ser | | 275 | 280 | 285 |
| Ala | Leu | Ser | Ser | Ile | Pro | Glu | Gln | Lys | Cys | Asn | Pro | His | Leu | Pro | | 290 | 295 | 300 |
| Thr | Gln | Leu | Gly | Asn | Glu | Thr | Val | Val | Ala | Gly | Pro | Glu | Gly | Tyr | | 305 | 310 | 315 |
| Glu | Thr | Gln | Trp | Trp | Asp | Ala | Pro | Ser | Ile | Val | Gly | Leu | Ile | Ile | | 320 | 325 | 330 |
| Phe | Leu | Leu | Cys | Thr | Leu | Phe | Ile | Ser | Leu | Arg | Ser | Ser | Asp | His | | 335 | 340 | 345 |
| Arg | Gln | Val | Asn | Ser | Leu | Met | Gln | Thr | Glu | Glu | Cys | Pro | Pro | Met | | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 350 | 355 | 360 |
| Leu Asp Ala Thr Gln Gln Gln Gln Gln | Gln Val Ala Ala Cys Glu | |
| 365 | 370 | 375 |
| Gly Arg Ala Phe Asp Asn Glu Gln Asp | Gly Val Thr Tyr Ser Tyr | |
| 380 | 385 | 390 |
| Ser Phe Phe His Phe Cys Leu Val Leu | Ala Ser Leu His Val Met | |
| 395 | 400 | 405 |
| Met Thr Leu Thr Asn Trp Tyr Lys Pro | Gly Glu Thr Arg Lys Met | |
| 410 | 415 | 420 |
| Ile Ser Thr Trp Thr Ala Val Trp Val | Lys Ile Cys Ala Ser Trp | |
| 425 | 430 | 435 |
| Ala Gly Leu Leu Leu Tyr Leu Trp Thr | Leu Val Ala Pro Leu Leu | |
| 440 | 445 | 450 |
| Leu Arg Asn Arg Asp Phe Ser | | |
| 455 | | |

<210> 20
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 20
 gccgcctcat cttcacgttc ttcc 24

<210> 21
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 21
 tcatccagct ggtgctgctc 20

<210> 22
 <211> 20
 <212> DNA
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<220>
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<400> 22
 cttcttccac ttctgcctgg 20

<210> 23
 <211> 18

<212> DNA
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 <220>
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 <400> 23
 cctgggcaaa aatgcaac 18

 <210> 24
 <211> 24
 <212> DNA
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 <220>
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 <400> 24
 caggaatgta gaaggcaccc acgg 24

 <210> 25
 <211> 24
 <212> DNA
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 tggcacagat cttcacccac acgg 24

 <210> 26
 <211> 50
 <212> DNA
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 tgtccatcat tatgctgagc ccgggctgg agagtcagct ctacaagctg 50

 <210> 27
 <211> 1351
 <212> DNA
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 ttaacctggg tcaaatgcac ggattctcac ctctgtacagt tacgctctcc 100
 cgcggcacgt ccgcgaggac ttgaagtcct gagcgctcaa gtttgtccgt 150
 aggtcgagag aaggccatgg aggtgccgcc accggcaccg cggagctttc 200
 tctgtagagc attgtgccta tttccccgag tctttgctgc cgaagctgtg 250

Asp Ser Glu Val Leu Glu Glu Arg Gln Lys Arg Leu Pro Tyr Val
35 40 45

Pro Glu Pro Tyr Tyr Pro Glu Ser Gly Trp Asp Arg Leu Arg Glu
50 55 60

Leu Phe Gly Lys Asp Glu Gln Gln Arg Ile Ser Lys Asp Leu Ala
65 70 75

Asn Ile Cys Lys Thr Ala Ala Thr Ala Gly Ile Ile Gly Trp Val
80 85 90

Tyr Gly Gly Ile Pro Ala Phe Ile His Ala Lys Gln Gln Tyr Ile
95 100 105

Glu Gln Ser Gln Ala Glu Ile Tyr His Asn Arg Phe Asp Ala Val
110 115 120

Gln Ser Ala His Arg Ala Ala Thr Arg Gly Phe Ile Arg Tyr Gly
125 130 135

Trp Arg Trp Gly Trp Arg Thr Ala Val Phe Val Thr Ile Phe Asn
140 145 150

Thr Val Asn Thr Ser Leu Asn Val Tyr Arg Asn Lys Asp Ala Leu
155 160 165

Ser His Phe Val Ile Ala Gly Ala Val Thr Gly Ser Leu Phe Arg
170 175 180

Ile Asn Val Gly Leu Arg Gly Leu Val Ala Gly Gly Ile Ile Gly
185 190 195

Ala Leu Leu Gly Thr Pro Val Gly Gly Leu Leu Met Ala Phe Gln
200 205 210

Lys Tyr Ala Gly Glu Thr Val Gln Glu Arg Lys Gln Lys Asp Arg
215 220 225

Lys Ala Leu His Glu Leu Lys Leu Glu Glu Trp Lys Gly Arg Leu
230 235 240

Gln Val Thr Glu His Leu Pro Glu Lys Ile Glu Ser Ser Leu Arg
245 250 255

Glu Asp Glu Pro Glu Asn Asp Ala Lys Lys Ile Glu Ala Leu Leu
260 265 270

Asn Leu Pro Arg Asn Pro Ser Val Ile Asp Lys Gln Asp Lys Asp
275 280 285

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<211> 324

<212> DNA

<213> Homo sapiens

<400> 29

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 tgaacagcag agaatttcaa aggaccttgc taatatctgt aagacggcag 150
 ctacagcagg catcattggc tgggtgtatg ggggaatacc agcttttatt 200
 catgctaaac aacaatacat tgagcagagc caggcagaaa tttatcataa 250
 ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca cgaggcttca 300
 ttogttcatg gctggcgccg aacc 324

<210> 30
 <211> 377
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 262, 330, 371
 <223> unknown base

<400> 30
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 accgcggagc ttttttctgt agagcattgt gcctatttcc ccgagttttt 100
 gctgccgaag ctgtgactgc cgattcggaa gtccttgagg agcgtcagaa 150
 gcggcttccc tacgtcccag agccctatta cccggaattt ggatgggacc 200
 gcctccggga gctgtttggc aaagatgaac agcagagaat ttcaaaggac 250
 cttgctgata tntgtaagac ggcagctaca gcaggcatca ttggctgggt 300
 gtatggggga ataccagctt ttattcatgn taaacaacaa tacattgagc 350
 agagccaggc agaaatttat nataacc 377

<210> 31
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 31
 tcgtacagtt acgctctccc 20

<210> 32
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 32
cttgaggagc gtcagaagcg 20

<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 33
ataacgaatg aagcctcgtg 20

<210> 34
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 34
gctaatatct gtaagacggc agctacagca ggcatcattg 40

<210> 35
<211> 1819
<212> DNA
<213> Homo sapiens

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ccaccacagt ctgcgttgct gccccgcctg ggccaggccc caaaggcaag 100
gacaaagcag ctgtcaggga acctccgccg gagtccaatt tacgtgcagc 150
tgccggcaac cacaggttcc aagatggttt gcgggggctt cgcgtgttcc 200
aagaactgcc tgtgcgccct caacctgctt tacaccttgg ttagtctgct 250
gctaattgga attgctgcgt ggggcattgg ctccgggctg atttcagtc 300
tccgagtggc cggcgtggctc attgcagtgg gcatcttctt gttcctgatt 350
gcttttagtgg gtctgattgg agctgtaaaa catcatcagg tgttgctatt 400
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gctgtgttaa aagtgaccac tcgtgctcgc catgtgctcc aatcatagga 650
gaatatgctg gagagggttt gagatttggt ggtggcattg gcctgttctt 700

cagttttaca gagatcctgg gtgtttggct gacctacaga tacaggaacc 750
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 atctcccata atttgaaatt gaaatcgtat tgtgtggctc tgtatattct 1750
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<210> 36

<211> 204

<212> PRT

<213> Homo sapiens

<400> 36

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Leu Asn Leu Leu Tyr Thr Leu Val Ser Leu Leu Leu Ile Gly Ile
 20 25 30

Ala Ala Trp Gly Ile Gly Phe Gly Leu Ile Ser Ser Leu Arg Val
35 40 45

Val Gly Val Val Ile Ala Val Gly Ile Phe Leu Phe Leu Ile Ala
50 55 60

Leu Val Gly Leu Ile Gly Ala Val Lys His His Gln Val Leu Leu
65 70 75

Phe Phe Tyr Met Ile Ile Leu Leu Leu Val Phe Ile Val Gln Phe
80 85 90

Ser Val Ser Cys Ala Cys Leu Ala Leu Asn Gln Glu Gln Gln Gly
95 100 105

Gln Leu Leu Glu Val Gly Trp Asn Asn Thr Ala Ser Ala Arg Asn
110 115 120

Asp Ile Gln Arg Asn Leu Asn Cys Cys Gly Phe Arg Ser Val Asn
125 130 135

Pro Asn Asp Thr Cys Leu Ala Ser Cys Val Lys Ser Asp His Ser
140 145 150

Cys Ser Pro Cys Ala Pro Ile Ile Gly Glu Tyr Ala Gly Glu Val
155 160 165

Leu Arg Phe Val Gly Gly Ile Gly Leu Phe Phe Ser Phe Thr Glu
170 175 180

Ile Leu Gly Val Trp Leu Thr Tyr Arg Tyr Arg Asn Gln Lys Asp
185 190 195

Pro Arg Ala Asn Pro Ser Ala Phe Leu
200

<210> 37
<211> 390
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 20, 35, 61, 83, 106, 130, 133, 187, 232, 260, 336
<223> unknown base

<400> 37
tgattggagc tgtaaaaaan tcttcaggtg ttgtnatttt tttatatgat 50
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tagccntgaa ccaggagcaa cagggtcagn ttntggaggt tgggtggaac 150
aatacgga gtagctcgaaa tgacatccag agaaatntaa actgctgtgg 200
gttccgaagt gttaacccaa atgacacctg tntggctagc tgtgttaaaa 250
gtgaccactn gtgctcgcca tgtgctocaa tcataggaga atatgctgga 300

gagggttttga gatttggttg tggcattggc ctgttnttca gttttacaga 350
gatcctgggt gtttggtga cctacagata caggaaccag 390

<210> 38
<211> 566
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 27
<223> unknown base

<400> 38
aatcccaaat tccccaattt ttttggnctt tttagggaaa gatgtgttgt 50
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ttacaccaat gtattctaga atagttagt cttaggaaat tgtggtttaa 150
tttttgactt ttacaggtaa gtgcaaagga gaagtgggtt catgaaatgt 200
tctaattgtat aataacattt accttcagcc tcccatcaga atggaacgag 250
ttttgagtaa tccaggaagt atatctatat gatcttgata ttgttttata 300
taatttgaag tctaaaagac tgcattttta aacaagttag tattaatgag 350
ttggcccacg tagcaaaaag atatttgatt atcttaaaaa ttgttaaata 400
ccgttttcat gaaagttctc agtattgtaa cagcaacttg tcaaacctaa 450
gcatatttga atatgatctc ccataatttg aaattgaaat cgtattgtgt 500
ggaggaaatg gcaatcttat gtgtgctgaa ggacacagta agagcaccaa 550
gttgtgcccc acttgc 566

<210> 39
<211> 264
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 84-85, 206
<223> unknown base

<400> 39
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tggttggtgaa caatcacggc caagtgactc cgcaaagac atcccagaga 150
aatcctaaac tgctgtgggt tccgaagtgt taacccaaat gacacctgtc 200

tggtctngctg tgttaaaagt gaccactcgt gctcgccatg tgctccaatc 250
ataggagaat atgc 264

<210> 40
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 40
accacgtct gcgttgctgc c 21

<210> 41
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 41
gagaatatgc tggagagg 18

<210> 42
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 42
aggaatgcac taggattcgc gcgg 24

<210> 43
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 43
ggcccaaaag gcaaggacaa agcagctgtc agggaacctc cgccg 45

<210> 44
<211> 2061
<212> DNA
<213> Homo sapiens

<400> 44
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gacgctgcag tgtgagggac ctgtctgcac tgaggagagc agctgccaca 150
 cggaggatga cttgactgat gcaagggag ctggcttcca ggtcaaggcc 200
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 cctcatctgt atcaccagat gggccttct ctcaaacaca tgcaggatgt 1000
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 cagagccctc atgattagga ttagtgcctt tatttaaaaa ggccccagag 1900
 agctaactca cccttcacc atatgaggac gtggcaagaa gatgacatgt 1950
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 gatcttgaac ttccagcctc cagaactatg agaaataaaa ttctggttgt 2050
 ttgtagccta a 2061

<210> 45
 <211> 359
 <212> PRT
 <213> Homo sapiens

<400> 45
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 Glu Thr Leu Gln Cys Glu Gly Pro Val Cys Thr Glu Glu Ser Ser
 35 40 45
 Cys His Thr Glu Asp Asp Leu Thr Asp Ala Arg Glu Ala Gly Phe
 50 55 60
 Gln Val Lys Ala Tyr Thr Phe Ser Glu Pro Phe His Leu Ile Val
 65 70 75
 Ser Tyr Asp Trp Leu Ile Leu Gln Gly Pro Ala Lys Pro Val Phe
 80 85 90
 Glu Gly Asp Leu Leu Val Leu Arg Cys Gln Ala Trp Gln Asp Trp
 95 100 105
 Pro Leu Thr Gln Val Thr Phe Tyr Arg Asp Gly Ser Ala Leu Gly
 110 115 120
 Pro Pro Gly Pro Asn Arg Glu Phe Ser Ile Thr Val Val Gln Lys
 125 130 135
 Ala Asp Ser Gly His Tyr His Cys Ser Gly Ile Phe Gln Ser Pro
 140 145 150

<220>
<223> Synthetic oligonucleotide probe

<400> 47
tttccagcgc caattctc 18

<210> 48
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 48
agttcttgga ctgtgatagc cac 23

<210> 49
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 49
aaacttggtt gtcctcagtg gctg 24

<210> 50
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 50
gtgagggacc tgtctgcaact gaggagagca gctgccacac ggagg 45

<210> 51
<211> 2181
<212> DNA
<213> Homo sapiens

<400> 51
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ccaccagaag tttgagcctc tttggtagca ggaggctgga agaaaggaca 100
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gcacctaaca gtggacactt atggccgtcc catcctggaa gtgccagaga 200
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 aggctcagct ctgccagctc agaggaccag ctatatccag gatcatttct 2050
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 tgggtgctcaa taaatatcta atcataacag c 2181

<210> 52

<211> 321

<212> PRT

<213> Homo sapiens

<400> 52

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Ile | Leu | Leu | Gly | Leu | Leu | Leu | Leu | Gly | His | Leu | Thr | Val | 1 | 5 | 10 | 15 |
| Asp | Thr | Tyr | Gly | Arg | Pro | Ile | Leu | Glu | Val | Pro | Glu | Ser | Val | Thr | 20 | 25 | 30 | |
| Gly | Pro | Trp | Lys | Gly | Asp | Val | Asn | Leu | Pro | Cys | Thr | Tyr | Asp | Pro | 35 | 40 | 45 | |
| Leu | Gln | Gly | Tyr | Thr | Gln | Val | Leu | Val | Lys | Trp | Leu | Val | Gln | Arg | 50 | 55 | 60 | |
| Gly | Ser | Asp | Pro | Val | Thr | Ile | Phe | Leu | Arg | Asp | Ser | Ser | Gly | Asp | 65 | 70 | 75 | |
| His | Ile | Gln | Gln | Ala | Lys | Tyr | Gln | Gly | Arg | Leu | His | Val | Ser | His | 80 | 85 | 90 | |
| Lys | Val | Pro | Gly | Asp | Val | Ser | Leu | Gln | Leu | Ser | Thr | Leu | Glu | Met | 95 | 100 | 105 | |
| Asp | Asp | Arg | Ser | His | Tyr | Thr | Cys | Glu | Val | Thr | Trp | Gln | Thr | Pro | 110 | 115 | 120 | |
| Asp | Gly | Asn | Gln | Val | Val | Arg | Asp | Lys | Ile | Thr | Glu | Leu | Arg | Val | 125 | 130 | 135 | |
| Gln | Lys | Leu | Ser | Val | Ser | Lys | Pro | Thr | Val | Thr | Thr | Gly | Ser | Gly | 140 | 145 | 150 | |
| Tyr | Gly | Phe | Thr | Val | Pro | Gln | Gly | Met | Arg | Ile | Ser | Leu | Gln | Cys | 155 | 160 | 165 | |
| Gln | Ala | Arg | Gly | Ser | Pro | Pro | Ile | Ser | Tyr | Ile | Trp | Tyr | Lys | Gln | 170 | 175 | 180 | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Gln Thr Asn Asn | Gln Glu Pro Ile Lys | Val Ala Thr Leu Ser Thr | 185 | 190 | 195 |
| Leu Leu Phe Lys | Pro Ala Val Ile Ala | Asp Ser Gly Ser Tyr Phe | 200 | 205 | 210 |
| Cys Thr Ala Lys | Gly Gln Val Gly Ser | Glu Gln His Ser Asp Ile | 215 | 220 | 225 |
| Val Lys Phe Val | Val Lys Asp Ser Ser | Lys Leu Leu Lys Thr Lys | 230 | 235 | 240 |
| Thr Glu Ala Pro | Thr Thr Met Thr Tyr | Pro Leu Lys Ala Thr Ser | 245 | 250 | 255 |
| Thr Val Lys Gln | Ser Trp Asp Trp Thr | Thr Asp Met Asp Gly Tyr | 260 | 265 | 270 |
| Leu Gly Glu Thr | Ser Ala Gly Pro Gly | Lys Ser Leu Pro Val Phe | 275 | 280 | 285 |
| Ala Ile Ile Leu | Ile Ile Ser Leu Cys | Cys Met Val Val Phe Thr | 290 | 295 | 300 |
| Met Ala Tyr Ile | Met Leu Cys Arg Lys | Thr Ser Gln Gln Glu His | 305 | 310 | 315 |
| Val Tyr Glu Ala | Ala Arg | | 320 | | |

<210> 53
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 53
 tatccctcca attgagcacc ctgg 24

 <210> 54
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 54
 gtcggaagac atcccaacaa g 21

 <210> 55
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>

<223> Synthetic oligonucleotide probe

<400> 55

cttcacaatg tcgctgtgct gctc 24

<210> 56

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 56

agccaaatcc agcagctggc ttac 24

<210> 57

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 57

tggatgaccg gagccactac acgtgtgaag tcacctggca gactcctgat 50

<210> 58

<211> 2458

<212> DNA

<213> Homo sapiens

<400> 58

gcgcgcgggag cccatctgcc ccagggggca cggggcgcgg ggccgggtcc 50

cgcccggcac atggctgcag ccacctcgcg cgcaccccgga ggcgccgcgc 100

ccagctcgcc cgaggtccgt cggaggcgcc cggccgcccc ggagccaagc 150

agcaactgag cggggaagcg cccgcgtccg gggatcgga tgtccctcct 200

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ctgagatcaa gagagtggca gaggaaaagg tcactttgcc ctgccaccat 300

caactggggc ttccagaaaa agacactctg gatattgaat ggctgctcac 350

cgataatgaa gggaacaaaa aagtggatgat cacttactcc agtcgtcatg 400

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| Met | Ser | Leu | Leu | Leu | Leu | Leu | Leu | Val | Ser | Tyr | Tyr | Val | Gly | 1 | 5 | 10 | 15 | |
| Thr | Leu | Gly | Thr | His | Thr | Glu | Ile | Lys | Arg | Val | Ala | Glu | Glu | Lys | 20 | 25 | 30 | |
| Val | Thr | Leu | Pro | Cys | His | His | Gln | Leu | Gly | Leu | Pro | Glu | Lys | Asp | 35 | 40 | 45 | |
| Thr | Leu | Asp | Ile | Glu | Trp | Leu | Leu | Thr | Asp | Asn | Glu | Gly | Asn | Gln | 50 | 55 | 60 | |
| Lys | Val | Val | Ile | Thr | Tyr | Ser | Ser | Arg | His | Val | Tyr | Asn | Asn | Leu | 65 | 70 | 75 | |
| Thr | Glu | Glu | Gln | Lys | Gly | Arg | Val | Ala | Phe | Ala | Ser | Asn | Phe | Leu | 80 | 85 | 90 | |
| Ala | Gly | Asp | Ala | Ser | Leu | Gln | Ile | Glu | Pro | Leu | Lys | Pro | Ser | Asp | 95 | 100 | 105 | |
| Glu | Gly | Arg | Tyr | Thr | Cys | Lys | Val | Lys | Asn | Ser | Gly | Arg | Tyr | Val | 110 | 115 | 120 | |
| Trp | Ser | His | Val | Ile | Leu | Lys | Val | Leu | Val | Arg | Pro | Ser | Lys | Pro | 125 | 130 | 135 | |
| Lys | Cys | Glu | Leu | Glu | Gly | Glu | Leu | Thr | Glu | Gly | Ser | Asp | Leu | Thr | 140 | 145 | 150 | |
| Leu | Gln | Cys | Glu | Ser | Ser | Ser | Gly | Thr | Glu | Pro | Ile | Val | Tyr | Tyr | 155 | 160 | 165 | |
| Trp | Gln | Arg | Ile | Arg | Glu | Lys | Glu | Gly | Glu | Asp | Glu | Arg | Leu | Pro | 170 | 175 | 180 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Lys | Ser | Arg | Ile | Asp | Tyr | Asn | His | Pro | Gly | Arg | Val | Leu | Leu | 185 | 190 | 195 |
| Gln | Asn | Leu | Thr | Met | Ser | Tyr | Ser | Gly | Leu | Tyr | Gln | Cys | Thr | Ala | 200 | 205 | 210 |
| Gly | Asn | Glu | Ala | Gly | Lys | Glu | Ser | Cys | Val | Val | Arg | Val | Thr | Val | 215 | 220 | 225 |
| Gln | Tyr | Val | Gln | Ser | Ile | Gly | Met | Val | Ala | Gly | Ala | Val | Thr | Gly | 230 | 235 | 240 |
| Ile | Val | Ala | Gly | Ala | Leu | Leu | Ile | Phe | Leu | Leu | Val | Trp | Leu | Leu | 245 | 250 | 255 |
| Ile | Arg | Arg | Lys | Asp | Lys | Glu | Arg | Tyr | Glu | Glu | Glu | Glu | Arg | Pro | 260 | 265 | 270 |
| Asn | Glu | Ile | Arg | Glu | Asp | Ala | Glu | Ala | Pro | Lys | Ala | Arg | Leu | Val | 275 | 280 | 285 |
| Lys | Pro | Ser | Ser | Ser | Ser | Ser | Gly | Ser | Arg | Ser | Ser | Arg | Ser | Gly | 290 | 295 | 300 |
| Ser | Ser | Ser | Thr | Arg | Ser | Thr | Ala | Asn | Ser | Ala | Ser | Arg | Ser | Gln | 305 | 310 | 315 |
| Arg | Thr | Leu | Ser | Thr | Asp | Ala | Ala | Pro | Gln | Pro | Gly | Leu | Ala | Thr | 320 | 325 | 330 |
| Gln | Ala | Tyr | Ser | Leu | Val | Gly | Pro | Glu | Val | Arg | Gly | Ser | Glu | Pro | 335 | 340 | 345 |
| Lys | Lys | Val | His | His | Ala | Asn | Leu | Thr | Lys | Ala | Glu | Thr | Thr | Pro | 350 | 355 | 360 |
| Ser | Met | Ile | Pro | Ser | Gln | Ser | Arg | Ala | Phe | Gln | Thr | Val | | | 365 | 370 | |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Leu | Leu | Gly | Phe | Leu | Ser | Thr | Thr | Thr | Ala | Gln | Pro | Glu | Gln | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Lys | Ala | Ser | Asn | Leu | Ile | Gly | Thr | Tyr | Arg | His | Val | Asp | Arg | Ala | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Thr | Gly | Gln | Val | Leu | Thr | Cys | Asp | Lys | Cys | Pro | Ala | Gly | Thr | Tyr | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Ser | Glu | His | Cys | Thr | Asn | Thr | Ser | Leu | Arg | Val | Cys | Ser | Ser | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Cys | Pro | Val | Gly | Thr | Phe | Thr | Arg | His | Glu | Asn | Gly | Ile | Glu | Lys | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Cys | His | Asp | Cys | Ser | Gln | Pro | Cys | Pro | Trp | Pro | Met | Ile | Glu | Lys | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Pro | Cys | Ala | Ala | Leu | Thr | Asp | Arg | Glu | Cys | Thr | Cys | Pro | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Met | Phe | Gln | Ser | Asn | Ala | Thr | Cys | Ala | Pro | His | Thr | Val | Cys | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Pro | Val | Gly | Trp | Gly | Val | Arg | Lys | Lys | Gly | Thr | Glu | Thr | Glu | Asp | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Arg | Cys | Lys | Gln | Cys | Ala | Arg | Gly | Thr | Phe | Ser | Asp | Val | Pro | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ser | Ser | Val | Met | Lys | Cys | Lys | Ala | Tyr | Thr | Asp | Cys | Leu | Ser | Gln | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Asn | Leu | Val | Val | Ile | Lys | Pro | Gly | Thr | Lys | Glu | Thr | Asp | Asn | Val | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Cys | Gly | Thr | Leu | Pro | Ser | Phe | Ser | Ser | Ser | Thr | Ser | Pro | Ser | Pro | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gly | Thr | Ala | Ile | Phe | Pro | Arg | Pro | Glu | His | Met | Glu | Thr | His | Glu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | Pro | Ser | Ser | Thr | Tyr | Val | Pro | Lys | Gly | Met | Asn | Ser | Thr | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ser | Asn | Ser | Ser | Ala | Ser | Val | Arg | Pro | Lys | Val | Leu | Ser | Ser | Ile | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gln | Glu | Gly | Thr | Val | Pro | Asp | Asn | Thr | Ser | Ser | Ala | Arg | Gly | Lys | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Glu | Asp | Val | Asn | Lys | Thr | Leu | Pro | Asn | Leu | Gln | Val | Val | Asn | His | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Gln | Gln | Gly | Pro | His | His | Arg | His | Ile | Leu | Lys | Leu | Leu | Pro | Ser | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Met | Glu | Ala | Thr | Gly | Gly | Glu | Lys | Ser | Ser | Thr | Pro | Ile | Lys | Gly | |

| 320 | | | | | | | | | | 325 | | | | | 330 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Pro | Lys | Arg | Gly | His | Pro | Arg | Gln | Asn | Leu | His | Lys | His | Phe | Asp | | | | | |
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| Ile | Asn | Glu | His | Leu | Pro | Trp | Met | Ile | Val | Leu | Phe | Leu | Leu | Leu | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Val | Leu | Val | Val | Ile | Val | Val | Cys | Ser | Ile | Arg | Lys | Ser | Ser | Arg | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Thr | Leu | Lys | Lys | Gly | Pro | Arg | Gln | Asp | Pro | Ser | Ala | Ile | Val | Glu | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Lys | Ala | Gly | Leu | Lys | Lys | Ser | Met | Thr | Pro | Thr | Gln | Asn | Arg | Glu | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Lys | Trp | Ile | Tyr | Tyr | Cys | Asn | Gly | His | Gly | Ile | Asp | Ile | Leu | Lys | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | |
| Leu | Val | Ala | Ala | Gln | Val | Gly | Ser | Gln | Trp | Lys | Asp | Ile | Tyr | Gln | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Phe | Leu | Cys | Asn | Ala | Ser | Glu | Arg | Glu | Val | Ala | Ala | Phe | Ser | Asn | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | |
| Gly | Tyr | Thr | Ala | Asp | His | Glu | Arg | Ala | Tyr | Ala | Ala | Leu | Gln | His | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Trp | Thr | Ile | Arg | Gly | Pro | Glu | Ala | Ser | Leu | Ala | Gln | Leu | Ile | Ser | | | | | |
| | | | | 470 | | | | | 475 | | | | | 480 | | | | | |
| Ala | Leu | Arg | Gln | His | Arg | Arg | Asn | Asp | Val | Val | Glu | Lys | Ile | Arg | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Gly | Leu | Met | Glu | Asp | Thr | Thr | Gln | Leu | Glu | Thr | Asp | Lys | Leu | Ala | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Leu | Pro | Met | Ser | Pro | Ser | Pro | Leu | Ser | Pro | Ser | Pro | Ile | Pro | Ser | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Pro | Asn | Ala | Lys | Leu | Glu | Asn | Ser | Ala | Leu | Leu | Thr | Val | Glu | Pro | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| Ser | Pro | Gln | Asp | Lys | Asn | Lys | Gly | Phe | Phe | Val | Asp | Glu | Ser | Glu | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| Pro | Leu | Leu | Arg | Cys | Asp | Ser | Thr | Ser | Ser | Gly | Ser | Ser | Ala | Leu | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | |
| Ser | Arg | Asn | Gly | Ser | Phe | Ile | Thr | Lys | Glu | Lys | Lys | Asp | Thr | Val | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | |
| Leu | Arg | Gln | Val | Arg | Leu | Asp | Pro | Cys | Asp | Leu | Gln | Pro | Ile | Phe | | | | | |
| | | | | 590 | | | | | 595 | | | | | 600 | | | | | |
| Asp | Asp | Met | Leu | His | Phe | Leu | Asn | Pro | Glu | Glu | Leu | Arg | Val | Ile | | | | | |
| | | | | 605 | | | | | 610 | | | | | 615 | | | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Ile | Pro | Gln | Ala | Glu | Asp | Lys | Leu | Asp | Arg | Leu | Phe | Glu |
| | | | | 620 | | | | | 625 | | | | | 630 |
| | | | | | | | | | | | | | | |
| Ile | Ile | Gly | Val | Lys | Ser | Gln | Glu | Ala | Ser | Gln | Thr | Leu | Leu | Asp |
| | | | | 635 | | | | | 640 | | | | | 645 |
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 <213> Artificial Sequence

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 catggggcac cagcctagc ctcacgtcc tttctgatct tactaagaa 2000
 caaaagaagc agcaactgc aaggcggtc tttccactg gtccatctgg 2050
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 acctcagtg caaagccacc aacagccact cagaaaagac gcaccagccc 2150
 agaagtgcag aactgcagtc actgcacgtt ttcattctta gggaccagaa 2200
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 taatctagga atgactcgtt taaggcctat tttcatgatt tctttgtagc 2300
 atttggtgct tgacgtatta ttgtccttg attccaaata atatgtttcc 2350
 ttccctcatt gtctggcgtg tctgcgtgga ctggtgacgt gaatcaaat 2400
 catccactga aa 2412

<210> 69

<211> 453

<212> PRT

<213> Homo sapiens

<400> 69

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Glu | Asn | Asp | Pro | Pro | Ala | Val | Glu | Ala | Pro | Phe | Ser | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Arg | Ser | Leu | Phe | Gly | Leu | Asp | Asp | Leu | Lys | Ile | Ser | Pro | Val | Ala |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Pro | Asp | Ala | Asp | Ala | Val | Ala | Ala | Gln | Ile | Leu | Ser | Leu | Leu | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Lys | Phe | Phe | Pro | Ile | Ile | Val | Ile | Gly | Ile | Ile | Ala | Leu | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Ala | Leu | Ala | Ile | Gly | Leu | Gly | Ile | His | Phe | Asp | Cys | Ser | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Tyr | Arg | Cys | Arg | Ser | Ser | Phe | Lys | Cys | Ile | Glu | Leu | Ile | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Arg | Cys | Asp | Gly | Val | Ser | Asp | Cys | Lys | Asp | Gly | Glu | Asp | Glu | Tyr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Arg | Cys | Val | Arg | Val | Gly | Gly | Gln | Asn | Ala | Val | Leu | Gln | Val | Phe |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 110 | | | | | 115 | | | | | 120 |
| Thr | Ala | Ala | Ser | Trp 125 | Lys | Thr | Met | Cys | Ser 130 | Asp | Asp | Trp | Lys | Gly 135 |
| His | Tyr | Ala | Asn | Val 140 | Ala | Cys | Ala | Gln | Leu 145 | Gly | Phe | Pro | Ser | Tyr 150 |
| Val | Ser | Ser | Asp | Asn 155 | Leu | Arg | Val | Ser | Ser 160 | Leu | Glu | Gly | Gln | Phe 165 |
| Arg | Glu | Glu | Phe | Val 170 | Ser | Ile | Asp | His | Leu 175 | Leu | Pro | Asp | Asp | Lys 180 |
| Val | Thr | Ala | Leu | His 185 | His | Ser | Val | Tyr | Val 190 | Arg | Glu | Gly | Cys | Ala 195 |
| Ser | Gly | His | Val | Val 200 | Thr | Leu | Gln | Cys | Thr 205 | Ala | Cys | Gly | His | Arg 210 |
| Arg | Gly | Tyr | Ser | Ser 215 | Arg | Ile | Val | Gly | Gly 220 | Asn | Met | Ser | Leu | Leu 225 |
| Ser | Gln | Trp | Pro | Trp 230 | Gln | Ala | Ser | Leu | Gln 235 | Phe | Gln | Gly | Tyr | His 240 |
| Leu | Cys | Gly | Gly | Ser 245 | Val | Ile | Thr | Pro | Leu 250 | Trp | Ile | Ile | Thr | Ala 255 |
| Ala | His | Cys | Val | Tyr 260 | Asp | Leu | Tyr | Leu | Pro 265 | Lys | Ser | Trp | Thr | Ile 270 |
| Gln | Val | Gly | Leu | Val 275 | Ser | Leu | Leu | Asp | Asn 280 | Pro | Ala | Pro | Ser | His 285 |
| Leu | Val | Glu | Lys | Ile 290 | Val | Tyr | His | Ser | Lys 295 | Tyr | Lys | Pro | Lys | Arg 300 |
| Leu | Gly | Asn | Asp | Ile 305 | Ala | Leu | Met | Lys | Leu 310 | Ala | Gly | Pro | Leu | Thr 315 |
| Phe | Asn | Glu | Met | Ile 320 | Gln | Pro | Val | Cys | Leu 325 | Pro | Asn | Ser | Glu | Glu 330 |
| Asn | Phe | Pro | Asp | Gly 335 | Lys | Val | Cys | Trp | Thr 340 | Ser | Gly | Trp | Gly | Ala 345 |
| Thr | Glu | Asp | Gly | Gly 350 | Asp | Ala | Ser | Pro | Val 355 | Leu | Asn | His | Ala | Ala 360 |
| Val | Pro | Leu | Ile | Ser 365 | Asn | Lys | Ile | Cys | Asn 370 | His | Arg | Asp | Val | Tyr 375 |
| Gly | Gly | Ile | Ile | Ser 380 | Pro | Ser | Met | Leu | Cys 385 | Ala | Gly | Tyr | Leu | Thr 390 |
| Gly | Gly | Val | Asp | Ser 395 | Cys | Gln | Gly | Asp | Ser 400 | Gly | Gly | Pro | Leu | Val 405 |

Cys Gln Glu Arg Arg Leu Trp Lys Leu Val Gly Ala Thr Ser Phe
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Gly Ile Gly Cys Ala Glu Val Asn Lys Pro Gly Val Tyr Thr Arg
425 430 435
Val Thr Ser Phe Leu Asp Trp Ile His Glu Gln Met Glu Arg Asp
440 445 450
Leu Lys Thr

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<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 70
tgacatcgcc cttatgaagc tggc 24

<210> 71
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 71
tacacgtccc tgtggttgca gata 24

<210> 72
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 72
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<210> 73
<211> 3305
<212> DNA
<213> Homo sapiens

<400> 73
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gcacgcacac acacgggggg aaactttttt aaaaatgaaa ggctagaaga 150
gctcagcggc ggcgcggggc ctgcgcgagg gctcggagc tgactcgccg 200

aggcaggaaa tccctccggt cgcgacgcc ggccccggct cggcgccgc 250
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 caacccttca ttttaacaagt aagaatgtta aaaagtgaac acaatgtaag 3250
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 gaaat 3305

<210> 74

<211> 735

<212> PRT

<213> Homo sapiens

<400> 74

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Ala | Arg | Pro | Leu | Pro | Val | Ser | Pro | Ala | Arg | Ala | Leu | Leu | 1 | 5 | 10 | 15 |
| Leu | Ala | Leu | Ala | Gly | Ala | Leu | Leu | Ala | Pro | Cys | Glu | Ala | Arg | Gly | 20 | 25 | 30 | |
| Val | Ser | Leu | Trp | Asn | Gln | Gly | Arg | Ala | Asp | Glu | Val | Val | Ser | Ala | 35 | 40 | 45 | |
| Ser | Val | Arg | Ser | Gly | Asp | Leu | Trp | Ile | Pro | Val | Lys | Ser | Phe | Asp | 50 | 55 | 60 | |
| Ser | Lys | Asn | His | Pro | Glu | Val | Leu | Asn | Ile | Arg | Leu | Gln | Arg | Glu | 65 | 70 | 75 | |
| Ser | Lys | Glu | Leu | Ile | Ile | Asn | Leu | Glu | Arg | Asn | Glu | Gly | Leu | Ile | 80 | 85 | 90 | |
| Ala | Ser | Ser | Phe | Thr | Glu | Thr | His | Tyr | Leu | Gln | Asp | Gly | Thr | Asp | 95 | 100 | 105 | |
| Val | Ser | Leu | Ala | Arg | Asn | Tyr | Thr | Gly | His | Cys | Tyr | Tyr | His | Gly | 110 | 115 | 120 | |
| His | Val | Arg | Gly | Tyr | Ser | Asp | Ser | Ala | Val | Ser | Leu | Ser | Thr | Cys | 125 | 130 | 135 | |
| Ser | Gly | Leu | Arg | Gly | Leu | Ile | Val | Phe | Glu | Asn | Glu | Ser | Tyr | Val | 140 | 145 | 150 | |
| Leu | Glu | Pro | Met | Lys | Ser | Ala | Thr | Asn | Arg | Tyr | Lys | Leu | Phe | Pro | 155 | 160 | 165 | |
| Ala | Lys | Lys | Leu | Lys | Ser | Val | Arg | Gly | Ser | Cys | Gly | Ser | His | His | 170 | 175 | 180 | |
| Asn | Thr | Pro | Asn | Leu | Ala | Ala | Lys | Asn | Val | Phe | Pro | Pro | Pro | Ser | 185 | 190 | 195 | |
| Gln | Thr | Trp | Ala | Arg | Arg | His | Lys | Arg | Glu | Thr | Leu | Lys | Ala | Thr | 200 | 205 | 210 | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Lys Tyr Val Glu | Leu Val Ile Val Ala | Asp Asn Arg Glu Phe | Gln |
| | 215 | 220 | 225 |
| Arg Gln Gly Lys | Asp Leu Glu Lys Val | Lys Gln Arg Leu Ile | Glu |
| | 230 | 235 | 240 |
| Ile Ala Asn His | Val Asp Lys Phe Tyr | Arg Pro Leu Asn Ile | Arg |
| | 245 | 250 | 255 |
| Ile Val Leu Val | Gly Val Glu Val Trp | Asn Asp Met Asp Lys | Cys |
| | 260 | 265 | 270 |
| Ser Val Ser Gln | Asp Pro Phe Thr Ser | Leu His Glu Phe Leu | Asp |
| | 275 | 280 | 285 |
| Trp Arg Lys Met | Lys Leu Leu Pro Arg | Lys Ser His Asp Asn | Ala |
| | 290 | 295 | 300 |
| Gln Leu Val Ser | Gly Val Tyr Phe Gln | Gly Thr Thr Ile Gly | Met |
| | 305 | 310 | 315 |
| Ala Pro Ile Met | Ser Met Cys Thr Ala | Asp Gln Ser Gly Gly | Ile |
| | 320 | 325 | 330 |
| Val Met Asp His | Ser Asp Asn Pro Leu | Gly Ala Ala Val Thr | Leu |
| | 335 | 340 | 345 |
| Ala His Glu Leu | Gly His Asn Phe Gly | Met Asn His Asp Thr | Leu |
| | 350 | 355 | 360 |
| Asp Arg Gly Cys | Ser Cys Gln Met Ala | Val Glu Lys Gly Gly | Cys |
| | 365 | 370 | 375 |
| Ile Met Asn Ala | Ser Thr Gly Tyr Pro | Phe Pro Met Val Phe | Ser |
| | 380 | 385 | 390 |
| Ser Cys Ser Arg | Lys Asp Leu Glu Thr | Ser Leu Glu Lys Gly | Met |
| | 395 | 400 | 405 |
| Gly Val Cys Leu | Phe Asn Leu Pro Glu | Val Arg Glu Ser Phe | Gly |
| | 410 | 415 | 420 |
| Gly Gln Lys Cys | Gly Asn Arg Phe Val | Glu Glu Gly Glu Glu | Cys |
| | 425 | 430 | 435 |
| Asp Cys Gly Glu | Pro Glu Glu Cys Met | Asn Arg Cys Cys Asn | Ala |
| | 440 | 445 | 450 |
| Thr Thr Cys Thr | Leu Lys Pro Asp Ala | Val Cys Ala His Gly | Leu |
| | 455 | 460 | 465 |
| Cys Cys Glu Asp | Cys Gln Leu Lys Pro | Ala Gly Thr Ala Cys | Arg |
| | 470 | 475 | 480 |
| Asp Ser Ser Asn | Ser Cys Asp Leu Pro | Glu Phe Cys Thr Gly | Ala |
| | 485 | 490 | 495 |
| Ser Pro His Cys | Pro Ala Asn Val Tyr | Leu His Asp Gly His | Ser |

<220>
 <223> Synthetic oligonucleotide probe

 <400> 79
 cactgggcac ctcccttc 18

 <210> 80
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 80
 ctccaggctg gtctccaagt ccttcc 26

 <210> 81
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 81
 tccctgttgg actctgcagc ttcc 24

 <210> 82
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 82
 cttcgcgtggg aagagtttg 19

 <210> 83
 <211> 50
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 83
 gtgcaaccaa cagatacaaa ctcttcccag cgaagaagct gaaaagcgtc 50

 <210> 84
 <211> 1714
 <212> DNA
 <213> Homo sapiens

 <400> 84
 catcctgcaa catggtgaaa ccacgcctgg ctaattttgt tgtatttttg 50

gtagagatgg gatttcaccg tgtagccag gattgtctca atctgacctc 100
 atgatctgcc cgcctcggcc tcccaaagtg ctgggattac aggcgagtg 150
 aaccacaccc ggccacaaac tttttaagaa gttaatgaaa ccataccttt 200
 tacattttta atgacaggaa aatgctcaca ataattgtta acccaaaatt 250
 ctggatacaa aagtacaatc tttactgtgt aaatacatgt atatgtacta 300
 tatgaaaata taccaaatat caataatact tatctctggg taaaaacctc 350
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 ctgcaccagc caggagccac ccatcctcca gcacactgag cagcaagctg 700
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 gccctccaac agtgccctac agcctacagc cggctctcctt gtgggtcttg 900
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gaatagcgtg aactcaggag gcgagacttg cagtgagccg agattgcgct 1650
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aaaaaaaaaa aaaa 1714

<210> 85
<211> 67
<212> PRT
<213> Homo sapiens

<400> 85
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20 25 30
Thr Ser Met Pro Glu Ala Thr Ala Ala Glu Thr Thr Lys Pro Ser
35 40 45
Asn Ser Ala Leu Gln Pro Thr Ala Gly Leu Leu Val Val Leu Leu
50 55 60
Ala Leu Leu His Leu Tyr His
65

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<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 86
acgggcacac tggatcccaa atg 23

<210> 87
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 87
ggtagagatg tagaaggga agcaagacc 29

<210> 88
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 88
gctccctacc cgtgcaggtt tcttcatttg ttccctttaac cagtatgccg 50

<210> 89
<211> 2956
<212> DNA
<213> Homo sapiens

<400> 89
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 ttaaaggaaa tctttattaa tcacgtatgg ttcacagata attctttttt 2800
 taaaaaaacc caacctccta gagaagcaca actgtcaaga gtcttgtaca 2850
 cacaacttca gctttgcatc acgagtcttg tattccaaga aaatcaaagt 2900
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 ttttaa 2956

<210> 90

<211> 432

<212> PRT

<213> Homo sapiens

<400> 90

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Pro | Ala | Arg | Pro | Gly | Arg | Leu | Leu | Pro | Leu | Leu | Ala | Arg | Pro | 1 | 5 | 10 | 15 |
| Ala | Ala | Leu | Thr | Ala | Leu | Leu | Leu | Leu | Leu | Leu | Gly | His | Gly | Gly | 20 | 25 | 30 | |
| Gly | Gly | Arg | Trp | Gly | Ala | Arg | Ala | Gln | Glu | Ala | Ala | Ala | Ala | Ala | 35 | 40 | 45 | |
| Ala | Asp | Gly | Pro | Pro | Ala | Ala | Asp | Gly | Glu | Asp | Gly | Gln | Asp | Pro | 50 | 55 | 60 | |
| His | Ser | Lys | His | Leu | Tyr | Thr | Ala | Asp | Met | Phe | Thr | His | Gly | Ile | 65 | 70 | 75 | |
| Gln | Ser | Ala | Ala | His | Phe | Val | Met | Phe | Phe | Ala | Pro | Trp | Cys | Gly | 80 | 85 | 90 | |
| His | Cys | Gln | Arg | Leu | Gln | Pro | Thr | Trp | Asn | Asp | Leu | Gly | Asp | Lys | 95 | 100 | 105 | |
| Tyr | Asn | Ser | Met | Glu | Asp | Ala | Lys | Val | Tyr | Val | Ala | Lys | Val | Asp | 110 | 115 | 120 | |
| Cys | Thr | Ala | His | Ser | Asp | Val | Cys | Ser | Ala | Gln | Gly | Val | Arg | Gly | 125 | 130 | 135 | |
| Tyr | Pro | Thr | Leu | Lys | Leu | Phe | Lys | Pro | Gly | Gln | Glu | Ala | Val | Lys | 140 | 145 | 150 | |
| Tyr | Gln | Gly | Pro | Arg | Asp | Phe | Gln | Thr | Leu | Glu | Asn | Trp | Met | Leu | 155 | 160 | 165 | |
| Gln | Thr | Leu | Asn | Glu | Glu | Pro | Val | Thr | Pro | Glu | Pro | Glu | Val | Glu | 170 | 175 | 180 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Pro | Ser | Ala | Pro | Glu | Leu | Lys | Gln | Gly | Leu | Tyr | Glu | Leu | Ser | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Ser | Asn | Phe | Glu | Leu | His | Val | Ala | Gln | Gly | Asp | His | Phe | Ile | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Phe | Phe | Ala | Pro | Trp | Cys | Gly | His | Cys | Lys | Ala | Leu | Ala | Pro | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Thr | Trp | Glu | Gln | Leu | Ala | Leu | Gly | Leu | Glu | His | Ser | Glu | Thr | Val | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Lys | Ile | Gly | Lys | Val | Asp | Cys | Thr | Gln | His | Tyr | Glu | Leu | Cys | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Asn | Gln | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Leu | Trp | Phe | Arg | Asp | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gly | Lys | Lys | Val | Asp | Gln | Tyr | Lys | Gly | Lys | Arg | Asp | Leu | Glu | Ser | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Leu | Arg | Glu | Tyr | Val | Glu | Ser | Gln | Leu | Gln | Arg | Thr | Glu | Thr | Gly | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ala | Thr | Glu | Thr | Val | Thr | Pro | Ser | Glu | Ala | Pro | Val | Leu | Ala | Ala | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Glu | Pro | Glu | Ala | Asp | Lys | Gly | Thr | Val | Leu | Ala | Leu | Thr | Glu | Asn | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Asn | Phe | Asp | Asp | Thr | Ile | Ala | Glu | Gly | Ile | Thr | Phe | Ile | Lys | Phe | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Tyr | Ala | Pro | Trp | Cys | Gly | His | Cys | Lys | Thr | Leu | Ala | Pro | Thr | Trp | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Glu | Glu | Leu | Ser | Lys | Lys | Glu | Phe | Pro | Gly | Leu | Ala | Gly | Val | Lys | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Ile | Ala | Glu | Val | Asp | Cys | Thr | Ala | Glu | Arg | Asn | Ile | Cys | Ser | Lys | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Tyr | Ser | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Leu | Leu | Phe | Arg | Gly | Gly | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Lys | Lys | Val | Ser | Glu | His | Ser | Gly | Gly | Arg | Asp | Leu | Asp | Ser | Leu | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| His | Arg | Phe | Val | Leu | Ser | Gln | Ala | Lys | Asp | Glu | Leu | | | | |
| | | | | 425 | | | | | 430 | | | | | | |

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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 92
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 92
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<210> 93
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 93
aagtggtcgc cttgtgcaac gtgc 24

<210> 94
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 94
ggtcaaagg gatatatcgc cac 23

<210> 95
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<210> 96
<211> 1016
<212> DNA
<213> Homo sapiens

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aaaccaattt atcctcctgg tactatcttct tttgcaaatt cagagtctgg 100
gtctggatat tgatagccgt cctaccgctg aagtctgtgc cacacacaca 150

| 80 | 85 | 90 |
|--|----|----|
| Thr Gly Pro Ile Gly Lys Lys Gly Asp Lys Gly Glu Lys Gly Leu 95 100 105 | | |
| Leu Gly Ile Pro Gly Glu Lys Gly Lys Ala Gly Thr Val Cys Asp 110 115 120 | | |
| Cys Gly Arg Tyr Arg Lys Phe Val Gly Gln Leu Asp Ile Ser Ile 125 130 135 | | |
| Ala Arg Leu Lys Thr Ser Met Lys Phe Val Lys Asn Val Ile Ala 140 145 150 | | |
| Gly Ile Arg Glu Thr Glu Glu Lys Phe Tyr Tyr Ile Val Gln Glu 155 160 165 | | |
| Glu Lys Asn Tyr Arg Glu Ser Leu Thr His Cys Arg Ile Arg Gly 170 175 180 | | |
| Gly Met Leu Ala Met Pro Lys Asp Glu Ala Ala Asn Thr Leu Ile 185 190 195 | | |
| Ala Asp Tyr Val Ala Lys Ser Gly Phe Phe Arg Val Phe Ile Gly 200 205 210 | | |
| Val Asn Asp Leu Glu Arg Glu Gly Gln Tyr Met Ser Thr Asp Asn 215 220 225 | | |
| Thr Pro Leu Gln Asn Tyr Ser Asn Trp Asn Glu Gly Glu Pro Ser 230 235 240 | | |
| Asp Pro Tyr Gly His Glu Asp Cys Val Glu Met Leu Ser Ser Gly 245 250 255 | | |
| Arg Trp Asn Asp Thr Glu Cys His Leu Thr Met Tyr Phe Val Cys 260 265 270 | | |
| Glu Phe Ile Lys Lys Lys Lys 275 | | |

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 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 99
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 99

gatgatggag gctccatacc tcag 24

<210> 100

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 100

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<210> 101

<211> 2574

<212> DNA

<213> Homo sapiens

<400> 101

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ctcgacctcg acccacgcgt ccgctgctct ccgcccgtgt ggagtgggtg 100

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gagaagtctc agctagaacg agcggcccta ggttttcgga agggaggatc 200

agggatgttt gcgagcggct ggaaccagac ggtgccgata gaggaagcgg 250

gctccatggc tgccctcctg ctgctgcccc tgctgctgtt gctaccgctg 300

ctgctgctga agctacacct ctggccgcag ttgcgctggc ttccggcgga 350

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ctttctcatt cacggctcgc ggcgctttag ctactcagag gcggagcgcg 550

agagtaacag ggctgcacgc gccttcctac gtgcgctagg ctgggactgg 600

ggaccgcagc gcggcgacag cggcgagggg agcgtggag aaggcgagcg 650

ggcagcgccg ggagccggag atgcagcggc cggaagcggc gcggagtttg 700

ccggagggga cggtgccgcc agaggtggag gagccgccgc ccctctgtca 750

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gctctggttc gggctggcca aggccggcct gcgcaactgcc tttgtgcca 850

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 gccctagatt ttcttcagga ggtgaacgtc tatggagtca ctgtgccagg 2000
 gcatgaaggc agggctggaa tggcagccct agttctgcgt cccccccacg 2050
 ctttgacact tatgcagctc tacaccacg tgtctgagaa cttgccacct 2100
 tatgcccgcc ccgattcct caggctccag gagtctttgg ccaccacaga 2150
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tgggggccgt tgcaggtgta ctgggctgtc agggatcttt tctataccag 2400
aactgcggtc actattttgt aataaatgtg gctggagctg atccagctgt 2450
ctctgacctt aaaaaaaaaa aaaaaaaaaa aaaaaaaaaag ggcggccgcg 2500
actctagagt cgacctgcag tagggataac agggtaataa gcttggccgc 2550
catggcccaa cttgtttatt gcag 2574

<210> 102

<211> 730

<212> PRT

<213> Homo sapiens

<400> 102

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Val | Cys | Gln | Arg | Thr | Arg | Ala | Pro | Trp | Lys | Glu | Lys | Ser | 1 | 5 | 10 | 15 |
| Gln | Leu | Glu | Arg | Ala | Ala | Leu | Gly | Phe | Arg | Lys | Gly | Gly | Ser | Gly | 20 | 25 | 30 | |
| Met | Phe | Ala | Ser | Gly | Trp | Asn | Gln | Thr | Val | Pro | Ile | Glu | Glu | Ala | 35 | 40 | 45 | |
| Gly | Ser | Met | Ala | Ala | Leu | Leu | Leu | Leu | Pro | Leu | Leu | Leu | Leu | Leu | 50 | 55 | 60 | |
| Pro | Leu | Leu | Leu | Leu | Lys | Leu | His | Leu | Trp | Pro | Gln | Leu | Arg | Trp | 65 | 70 | 75 | |
| Leu | Pro | Ala | Asp | Leu | Ala | Phe | Ala | Val | Arg | Ala | Leu | Cys | Cys | Lys | 80 | 85 | 90 | |
| Arg | Ala | Leu | Arg | Ala | Arg | Ala | Leu | Ala | Ala | Ala | Ala | Ala | Asp | Pro | 95 | 100 | 105 | |
| Glu | Gly | Pro | Glu | Gly | Gly | Cys | Ser | Leu | Ala | Trp | Arg | Leu | Ala | Glu | 110 | 115 | 120 | |
| Leu | Ala | Gln | Gln | Arg | Ala | Ala | His | Thr | Phe | Leu | Ile | His | Gly | Ser | 125 | 130 | 135 | |
| Arg | Arg | Phe | Ser | Tyr | Ser | Glu | Ala | Glu | Arg | Glu | Ser | Asn | Arg | Ala | 140 | 145 | 150 | |
| Ala | Arg | Ala | Phe | Leu | Arg | Ala | Leu | Gly | Trp | Asp | Trp | Gly | Pro | Asp | 155 | 160 | 165 | |
| Gly | Gly | Asp | Ser | Gly | Glu | Gly | Ser | Ala | Gly | Glu | Gly | Glu | Arg | Ala | 170 | 175 | 180 | |
| Ala | Pro | Gly | Ala | Gly | Asp | Ala | Ala | Ala | Gly | Ser | Gly | Ala | Glu | Phe | 185 | 190 | 195 | |
| Ala | Gly | Gly | Asp | Gly | Ala | Ala | Arg | Gly | Gly | Gly | Ala | Ala | Ala | Pro | 200 | 205 | 210 | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Leu Ser Pro Gly | Ala Thr Val Ala Leu | Leu Leu Pro Ala Gly | Pro |
| 215 | | 220 | 225 |
| Glu Phe Leu Trp | Leu Trp Phe Gly Leu | Ala Lys Ala Gly Leu | Arg |
| 230 | | 235 | 240 |
| Thr Ala Phe Val | Pro Thr Ala Leu Arg | Arg Gly Pro Leu Leu | His |
| 245 | | 250 | 255 |
| Cys Leu Arg Ser | Cys Gly Ala Arg Ala | Leu Val Leu Ala Pro | Glu |
| 260 | | 265 | 270 |
| Phe Leu Glu Ser | Leu Glu Pro Asp Leu | Pro Ala Leu Arg Ala | Met |
| 275 | | 280 | 285 |
| Gly Leu His Leu | Trp Ala Ala Gly Pro | Gly Thr His Pro Ala | Gly |
| 290 | | 295 | 300 |
| Ile Ser Asp Leu | Leu Ala Glu Val Ser | Ala Glu Val Asp Gly | Pro |
| 305 | | 310 | 315 |
| Val Pro Gly Tyr | Leu Ser Ser Pro Gln | Ser Ile Thr Asp Thr | Cys |
| 320 | | 325 | 330 |
| Leu Tyr Ile Phe | Thr Ser Gly Thr Thr | Gly Leu Pro Lys Ala | Ala |
| 335 | | 340 | 345 |
| Arg Ile Ser His | Leu Lys Ile Leu Gln | Cys Gln Gly Phe Tyr | Gln |
| 350 | | 355 | 360 |
| Leu Cys Gly Val | His Gln Glu Asp Val | Ile Tyr Leu Ala Leu | Pro |
| 365 | | 370 | 375 |
| Leu Tyr His Met | Ser Gly Ser Leu Leu | Gly Ile Val Gly Cys | Met |
| 380 | | 385 | 390 |
| Gly Ile Gly Ala | Thr Val Val Leu Lys | Ser Lys Phe Ser Ala | Gly |
| 395 | | 400 | 405 |
| Gln Phe Trp Glu | Asp Cys Gln Gln His | Arg Val Thr Val Phe | Gln |
| 410 | | 415 | 420 |
| Tyr Ile Gly Glu | Leu Cys Arg Tyr Leu | Val Asn Gln Pro Pro | Ser |
| 425 | | 430 | 435 |
| Lys Ala Glu Arg | Gly His Lys Val Arg | Leu Ala Val Gly Ser | Gly |
| 440 | | 445 | 450 |
| Leu Arg Pro Asp | Thr Trp Glu Arg Phe | Val Arg Arg Phe Gly | Pro |
| 455 | | 460 | 465 |
| Leu Gln Val Leu | Glu Thr Tyr Gly Leu | Thr Glu Gly Asn Val | Ala |
| 470 | | 475 | 480 |
| Thr Ile Asn Tyr | Thr Gly Gln Arg Gly | Ala Val Gly Arg Ala | Ser |
| 485 | | 490 | 495 |
| Trp Leu Tyr Lys | His Ile Phe Pro Phe | Ser Leu Ile Arg Tyr | Asp |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 500 | | 505 | | 510 |
| Val Thr Thr Gly | Glu Pro Ile Arg Asp | Pro Gln Gly His Cys | Met | | |
| | 515 | 520 | 525 | | |
| Ala Thr Ser Pro | Gly Glu Pro Gly Leu | Leu Val Ala Pro Val | Ser | | |
| | 530 | 535 | 540 | | |
| Gln Gln Ser Pro | Phe Leu Gly Tyr Ala | Gly Gly Pro Glu Leu | Ala | | |
| | 545 | 550 | 555 | | |
| Gln Gly Lys Leu | Leu Lys Asp Val Phe | Arg Pro Gly Asp Val | Phe | | |
| | 560 | 565 | 570 | | |
| Phe Asn Thr Gly | Asp Leu Leu Val Cys | Asp Asp Gln Gly Phe | Leu | | |
| | 575 | 580 | 585 | | |
| Arg Phe His Asp | Arg Thr Gly Asp Thr | Phe Arg Trp Lys Gly | Glu | | |
| | 590 | 595 | 600 | | |
| Asn Val Ala Thr | Thr Glu Val Ala Glu | Val Phe Glu Ala Leu | Asp | | |
| | 605 | 610 | 615 | | |
| Phe Leu Gln Glu | Val Asn Val Tyr Gly | Val Thr Val Pro Gly | His | | |
| | 620 | 625 | 630 | | |
| Glu Gly Arg Ala | Gly Met Ala Ala Leu | Val Leu Arg Pro Pro | His | | |
| | 635 | 640 | 645 | | |
| Ala Leu Asp Leu | Met Gln Leu Tyr Thr | His Val Ser Glu Asn | Leu | | |
| | 650 | 655 | 660 | | |
| Pro Pro Tyr Ala | Arg Pro Arg Phe Leu | Arg Leu Gln Glu Ser | Leu | | |
| | 665 | 670 | 675 | | |
| Ala Thr Thr Glu | Thr Phe Lys Gln Gln | Lys Val Arg Met Ala | Asn | | |
| | 680 | 685 | 690 | | |
| Glu Gly Phe Asp | Pro Ser Thr Leu Ser | Asp Pro Leu Tyr Val | Leu | | |
| | 695 | 700 | 705 | | |
| Asp Gln Ala Val | Gly Ala Tyr Leu Pro | Leu Thr Thr Ala Arg | Tyr | | |
| | 710 | 715 | 720 | | |
| Ser Ala Leu Leu | Ala Gly Asn Leu Arg | Ile | | | |
| | 725 | 730 | | | |

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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ggagaatgtg gccacaac 18

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atccacttca gcggacac 18

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<212> DNA
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acgcgcgcat acacactcgc tctcgttgt ccatctccct cccgggggag 150
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gcgctccagg attctgcggc tcggaactcg gattgcagct ctgaaccccc 250
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<213> Homo sapiens

<400> 109

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| Met | Pro | Ser | Trp | Ile | Gly | Ala | Val | Ile | Leu | Pro | Leu | Leu | Gly | Leu |
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| Leu | Leu | Ser | Leu | Pro | Ala | Gly | Ala | Asp | Val | Lys | Ala | Arg | Ser | Cys |
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| Gly | Glu | Val | Arg | Gln | Ala | Tyr | Gly | Ala | Lys | Gly | Phe | Ser | Leu | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asp | Ile | Pro | Tyr | Gln | Glu | Ile | Ala | Gly | Glu | His | Leu | Arg | Ile | Cys |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Gln | Glu | Tyr | Thr | Cys | Cys | Thr | Thr | Glu | Met | Glu | Asp | Lys | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gln | Gln | Ser | Lys | Leu | Glu | Phe | Glu | Asn | Leu | Val | Glu | Glu | Thr | 80 | 85 | 90 |
| Ser | His | Phe | Val | Arg | Thr | Thr | Phe | Val | Ser | Arg | His | Lys | Lys | Phe | 95 | 100 | 105 |
| Asp | Glu | Phe | Phe | Arg | Glu | Leu | Leu | Glu | Asn | Ala | Glu | Lys | Ser | Leu | 110 | 115 | 120 |
| Asn | Asp | Met | Phe | Val | Arg | Thr | Tyr | Gly | Met | Leu | Tyr | Met | Gln | Asn | 125 | 130 | 135 |
| Ser | Glu | Val | Phe | Gln | Asp | Leu | Phe | Thr | Glu | Leu | Lys | Arg | Tyr | Tyr | 140 | 145 | 150 |
| Thr | Gly | Gly | Asn | Val | Asn | Leu | Glu | Glu | Met | Leu | Asn | Asp | Phe | Trp | 155 | 160 | 165 |
| Ala | Arg | Leu | Leu | Glu | Arg | Met | Phe | Gln | Leu | Ile | Asn | Pro | Gln | Tyr | 170 | 175 | 180 |
| His | Phe | Ser | Glu | Asp | Tyr | Leu | Glu | Cys | Val | Ser | Lys | Tyr | Thr | Asp | 185 | 190 | 195 |
| Gln | Leu | Lys | Pro | Phe | Gly | Asp | Val | Pro | Arg | Lys | Leu | Lys | Ile | Gln | 200 | 205 | 210 |
| Val | Thr | Arg | Ala | Phe | Ile | Ala | Ala | Arg | Thr | Phe | Val | Gln | Gly | Leu | 215 | 220 | 225 |
| Thr | Val | Gly | Arg | Glu | Val | Ala | Asn | Arg | Val | Ser | Lys | Val | Ser | Pro | 230 | 235 | 240 |
| Thr | Pro | Gly | Cys | Ile | Arg | Ala | Leu | Met | Lys | Met | Leu | Tyr | Cys | Pro | 245 | 250 | 255 |
| Tyr | Cys | Arg | Gly | Leu | Pro | Thr | Val | Arg | Pro | Cys | Asn | Asn | Tyr | Cys | 260 | 265 | 270 |
| Leu | Asn | Val | Met | Lys | Gly | Cys | Leu | Ala | Asn | Gln | Ala | Asp | Leu | Asp | 275 | 280 | 285 |
| Thr | Glu | Trp | Asn | Leu | Phe | Ile | Asp | Ala | Met | Leu | Leu | Val | Ala | Glu | 290 | 295 | 300 |
| Arg | Leu | Glu | Gly | Pro | Phe | Asn | Ile | Glu | Ser | Val | Met | Asp | Pro | Ile | 305 | 310 | 315 |
| Asp | Val | Lys | Ile | Ser | Glu | Ala | Ile | Met | Asn | Met | Gln | Glu | Asn | Ser | 320 | 325 | 330 |
| Met | Gln | Val | Ser | Ala | Lys | Val | Phe | Gln | Gly | Cys | Gly | Gln | Pro | Lys | 335 | 340 | 345 |
| Pro | Ala | Pro | Ala | Leu | Arg | Ser | Ala | Arg | Ser | Ala | Pro | Glu | Asn | Phe | 350 | 355 | 360 |
| Asn | Thr | Arg | Phe | Arg | Pro | Tyr | Asn | Pro | Glu | Glu | Arg | Pro | Thr | Thr | | | |

| 365 | | | | | | | | | | 370 | | | | | 375 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Ala | Ala | Gly | Thr | Ser | Leu | Asp | Arg | Leu | Val | Thr | Asp | Ile | Lys | Glu | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Lys | Leu | Lys | Leu | Ser | Lys | Lys | Val | Trp | Ser | Ala | Leu | Pro | Tyr | Thr | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Ile | Cys | Lys | Asp | Glu | Ser | Val | Thr | Ala | Gly | Thr | Ser | Asn | Glu | Glu | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | |
| Glu | Cys | Trp | Asn | Gly | His | Ser | Lys | Ala | Arg | Tyr | Leu | Pro | Glu | Ile | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Met | Asn | Asp | Gly | Leu | Thr | Asn | Gln | Ile | Asn | Asn | Pro | Glu | Val | Asp | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | |
| Val | Asp | Ile | Thr | Arg | Pro | Asp | Thr | Phe | Ile | Arg | Gln | Gln | Ile | Met | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Ala | Leu | Arg | Val | Met | Thr | Asn | Lys | Leu | Lys | Asn | Ala | Tyr | Asn | Gly | | | | | |
| | | | | 470 | | | | | 475 | | | | | 480 | | | | | |
| Asn | Asp | Val | Asn | Phe | Gln | Asp | Thr | Ser | Asp | Glu | Ser | Ser | Gly | Ser | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Gly | Ser | Gly | Ser | Gly | Cys | Met | Asp | Asp | Val | Cys | Pro | Thr | Glu | Phe | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Glu | Phe | Val | Thr | Thr | Glu | Ala | Pro | Ala | Val | Asp | Pro | Asp | Arg | Arg | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Glu | Val | Asp | Ser | Ser | Ala | Ala | Gln | Arg | Gly | His | Ser | Leu | Leu | Ser | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| Trp | Ser | Leu | Thr | Cys | Ile | Val | Leu | Ala | Leu | Gln | Arg | Leu | Cys | Arg | | | | | |
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<211> 515

<212> PRT

<213> Homo sapiens

<400> 114

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| Gln | Ala | Cys | Val | Cys | Pro | Gly | Lys | Met | Leu | Ala | Met | Gly | Ala | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Gly | Phe | Trp | Ile | Leu | Cys | Leu | Leu | Thr | Tyr | Gly | Tyr | Leu | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Trp | Gly | Gln | Ala | Leu | Glu | Glu | Glu | Glu | Glu | Gly | Ala | Leu | Leu | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gln | Ala | Gly | Glu | Lys | Leu | Glu | Pro | Ser | Thr | Thr | Ser | Thr | Ser | Gln |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Pro | His | Leu | Ile | Phe | Ile | Leu | Ala | Asp | Asp | Gln | Gly | Phe | Arg | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Val | Gly | Tyr | His | Gly | Ser | Glu | Ile | Lys | Thr | Pro | Thr | Leu | Asp | Lys |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Ala | Ala | Glu | Gly | Val | Lys | Leu | Glu | Asn | Tyr | Tyr | Val | Gln | Pro |

| | 110 | 115 | 120 |
|-----------------|---------------------|---------------------|-----|
| Ile Cys Thr Pro | Ser Arg Ser Gln Phe | Ile Thr Gly Lys Tyr | Gln |
| | 125 | 130 | 135 |
| Ile His Thr Gly | Leu Gln His Ser Ile | Ile Arg Pro Thr Gln | Pro |
| | 140 | 145 | 150 |
| Asn Cys Leu Pro | Leu Asp Asn Ala Thr | Leu Pro Gln Lys Leu | Lys |
| | 155 | 160 | 165 |
| Glu Val Gly Tyr | Ser Thr His Met Val | Gly Lys Trp His Leu | Gly |
| | 170 | 175 | 180 |
| Phe Asn Arg Lys | Glu Cys Met Pro Thr | Arg Arg Gly Phe Asp | Thr |
| | 185 | 190 | 195 |
| Phe Phe Gly Ser | Leu Leu Gly Ser Gly | Asp Tyr Tyr Thr His | Tyr |
| | 200 | 205 | 210 |
| Lys Cys Asp Ser | Pro Gly Met Cys Gly | Tyr Asp Leu Tyr Glu | Asn |
| | 215 | 220 | 225 |
| Asp Asn Ala Ala | Trp Asp Tyr Asp Asn | Gly Ile Tyr Ser Thr | Gln |
| | 230 | 235 | 240 |
| Met Tyr Thr Gln | Arg Val Gln Gln Ile | Leu Ala Ser His Asn | Pro |
| | 245 | 250 | 255 |
| Thr Lys Pro Ile | Phe Leu Tyr Thr Ala | Tyr Gln Ala Val His | Ser |
| | 260 | 265 | 270 |
| Pro Leu Gln Ala | Pro Gly Arg Tyr Phe | Glu His Tyr Arg Ser | Ile |
| | 275 | 280 | 285 |
| Ile Asn Ile Asn | Arg Arg Arg Tyr Ala | Ala Met Leu Ser Cys | Leu |
| | 290 | 295 | 300 |
| Asp Glu Ala Ile | Asn Asn Val Thr Leu | Ala Leu Lys Thr Tyr | Gly |
| | 305 | 310 | 315 |
| Phe Tyr Asn Asn | Ser Ile Ile Ile Tyr | Ser Ser Asp Asn Gly | Gly |
| | 320 | 325 | 330 |
| Gln Pro Thr Ala | Gly Gly Ser Asn Trp | Pro Leu Arg Gly Ser | Lys |
| | 335 | 340 | 345 |
| Gly Thr Tyr Trp | Glu Gly Gly Ile Arg | Ala Val Gly Phe Val | His |
| | 350 | 355 | 360 |
| Ser Pro Leu Leu | Lys Asn Lys Gly Thr | Val Cys Lys Glu Leu | Val |
| | 365 | 370 | 375 |
| His Ile Thr Asp | Trp Tyr Pro Thr Leu | Ile Ser Leu Ala Glu | Gly |
| | 380 | 385 | 390 |
| Gln Ile Asp Glu | Asp Ile Gln Leu Asp | Gly Tyr Asp Ile Trp | Glu |
| | 395 | 400 | 405 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ile | Ser | Glu | Gly | Leu | Arg | Ser | Pro | Arg | Val | Asp | Ile | Leu | His |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Asn | Ile | Asp | Pro | Tyr | Thr | Pro | Arg | Gln | Lys | Met | Ala | Pro | Gly | Gln |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Gln | Ala | Met | Gly | Ser | Gly | Thr | Leu | Gln | Ser | Ser | Gln | Pro | Ser | Glu |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Cys | Ser | Thr | Gly | Asn | Cys | Leu | Gln | Glu | Ile | Leu | Ala | Thr | Ala | Thr |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Gly | Ser | Pro | Leu | Ser | Leu | Ser | Ala | Thr | Trp | Asp | Arg | Thr | Gly | Gly |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Thr | Met | Asn | Gly | Ser | Pro | Cys | Gln | Leu | Ala | Lys | Val | Tyr | Gly | Phe |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Ser | Thr | Ser | Gln | Pro | Thr | His | Met | Arg | Gly | Trp | Thr | Tyr | Leu | Thr |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Gly | Ile | Gln | Glu | Ser | | | | | | | | | | |
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 tgggatctgt gactggaaac aggatagaga agatgatttt gactggaatc 1400
 ctgctgatcg agataatgct attggcttct atatggcagt tccggccttg 1450
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 gcaaccccaa agcaacttct gtttgctctt tgattaccgg ctggccggag 1550
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 actatcttta tatttgactt tgtatgtcag ttccctgggt tttttgatat 1850
 tgcacatag gacctctggc attttagaat tactagctga aaaattgtaa 1900
 tgtaccaaca gaaatattat tgtaagatgc ctttcttgta taagatatgc 1950
 caatatttgc tttaaataac atatcactgt atcttctcag tcatttctga 2000
 atctttccnc attatattat aaaatntgga aangtcagtt tatctcccct 2050
 cctcngtata tctgatttgt atangtangt tgatgngctt ctctctacaa 2100
 catttctaga aaatagaaaa aaaagcacag agaaatgttt aactgtttga 2150
 ctcttatgat acttcttgga aactatgaca tcaaagatag acttttgcct 2200
 aagtggctta gctgggtctt tcatagccaa acttgtatat ttaattcttt 2250
 gtaataataa 2260

<210> 119
 <211> 338
 <212> PRT
 <213> Homo sapiens

<400> 119
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 1 5 10 15

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Ala | Gly | Gly | Phe | Gly | Asn | Ala | Ala | Ser | Ala | Arg | His | His | Gly | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Leu | Leu | Ala | Ser | Ala | Arg | Gln | Pro | Gly | Val | Cys | His | Tyr | Gly | Thr | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Lys | Leu | Ala | Cys | Cys | Tyr | Gly | Trp | Arg | Arg | Asn | Ser | Lys | Gly | Val | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Cys | Glu | Ala | Thr | Cys | Glu | Pro | Gly | Cys | Lys | Phe | Gly | Glu | Cys | Val | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Gly | Pro | Asn | Lys | Cys | Arg | Cys | Phe | Pro | Gly | Tyr | Thr | Gly | Lys | Thr | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Cys | Ser | Gln | Asp | Val | Asn | Glu | Cys | Gly | Met | Lys | Pro | Arg | Pro | Cys | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gln | His | Arg | Cys | Val | Asn | Thr | His | Gly | Ser | Tyr | Lys | Cys | Phe | Cys | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Ser | Gly | His | Met | Leu | Met | Pro | Asp | Ala | Thr | Cys | Val | Asn | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Arg | Thr | Cys | Ala | Met | Ile | Asn | Cys | Gln | Tyr | Ser | Cys | Glu | Asp | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Glu | Glu | Gly | Pro | Gln | Cys | Leu | Cys | Pro | Ser | Ser | Gly | Leu | Arg | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | Pro | Asn | Gly | Arg | Asp | Cys | Leu | Asp | Ile | Asp | Glu | Cys | Ala | Ser | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gly | Lys | Val | Ile | Cys | Pro | Tyr | Asn | Arg | Arg | Cys | Val | Asn | Thr | Phe | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gly | Ser | Tyr | Tyr | Cys | Lys | Cys | His | Ile | Gly | Phe | Glu | Leu | Gln | Tyr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ile | Ser | Gly | Arg | Tyr | Asp | Cys | Ile | Asp | Ile | Asn | Glu | Cys | Thr | Met | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asp | Ser | His | Thr | Cys | Ser | His | His | Ala | Asn | Cys | Phe | Asn | Thr | Gln | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gly | Ser | Phe | Lys | Cys | Lys | Cys | Lys | Gln | Gly | Tyr | Lys | Gly | Asn | Gly | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Arg | Cys | Ser | Ala | Ile | Pro | Glu | Asn | Ser | Val | Lys | Glu | Val | Leu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Arg | Ala | Pro | Gly | Thr | Ile | Lys | Asp | Arg | Ile | Lys | Lys | Leu | Leu | Ala | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| His | Lys | Asn | Ser | Met | Lys | Lys | Lys | Ala | Lys | Ile | Lys | Asn | Val | Thr | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Pro | Glu | Pro | Thr | Arg | Thr | Pro | Thr | Pro | Lys | Val | Asn | Leu | Gln | Pro | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 305 | | 310 | | 315 |
| Phe Asn Tyr Glu | Glu Ile Val Ser Arg | Gly Gly Asn Ser His | Gly | | |
| | 320 | | 325 | | 330 |
| Gly Lys Lys Gly | Asn Glu Glu Lys | | | | |
| | 335 | | | | |

<210> 120
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 120
 cctcagtggc cacatgctca tg 22

<210> 121
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 121
 ggctgcacgt atggctatcc atag 24

<210> 122
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 122
 gataaactgt cagtacagct gtgaagacac agaagaaggg ccacagtgcc 50

<210> 123
 <211> 1199
 <212> DNA
 <213> Homo sapiens

<400> 123
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 ggccgagtgg cagggacgac gcccagaatg ggagctgact gatatggtgg 150
 tgtgggtgac tggagcctcg agtggaattg gtgaggagct ggcttaccag 200
 ttgtctaaac taggagtttc tcttgtgctg tcagccagaa gagtgcata 250
 gctggaaagg gtgaaaagaa gatgcctaga gaatggcaat ttaaaagaaa 300

aagatatact tgttttgccc cttgacctga ccgacactgg ttcccatgaa 350
 gcggctacca aagctgttct ccaggagttt ggtagaatcg acattctggt 400
 caacaatggt ggaatgtccc agcgttctct gtgcatggat accagcttgg 450
 atgtctacag aaagctaata gagcttaact acttagggac ggtgtccttg 500
 acaaaatgtg ttctgcctca catgatcgag aggaagcaag gaaagattgt 550
 tactgtgaat agcatcctgg gtatcatatc tgtacctctt tccattggat 600
 actgtgctag caagcatgct ctccgggggt tttttaatgg ccttcgaaca 650
 gaacttgcca cataccaggt tataatagtt tctaacattt gcccaggacc 700
 tgtgcaatca aatattgtgg agaattccct agctggagaa gtcacaaaga 750
 ctataggcaa taatggagac cagtcccaca agatgacaac cagtcgttgt 800
 gtgcggctga tgttaatcag catggccaat gatttgaaag aagtttggt 850
 ctcagaacaa cctttcttgt tagtaacata tttgtggcaa tacatgcaa 900
 cctgggcctg gtggataacc aacaagatgg ggaagaaaag gattgagaac 950
 ttttaagagt gtgtggatgc agactcttct tattttaaaa tctttaagac 1000
 aaaacatgac tgaaaagagc acctgtactt ttcaagccac tggagggaga 1050
 aatggaaaac atgaaaacag caatcttctt atgcttctga ataataaag 1100
 actaatttgt gattttactt tttaatagat atgactttgc ttccaacatg 1150
 gaatgaaata aaaaataaat aataaaagat tgccatgaat cttgcaaaa 1199

<210> 124
 <211> 289
 <212> PRT
 <213> Homo sapiens

<400> 124
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 1 5 10 15
 Leu Ala Tyr Gln Leu Ser Lys Leu Gly Val Ser Leu Val Leu Ser
 20 25 30
 Ala Arg Arg Val His Glu Leu Glu Arg Val Lys Arg Arg Cys Leu
 35 40 45
 Glu Asn Gly Asn Leu Lys Glu Lys Asp Ile Leu Val Leu Pro Leu
 50 55 60
 Asp Leu Thr Asp Thr Gly Ser His Glu Ala Ala Thr Lys Ala Val
 65 70 75
 Leu Gln Glu Phe Gly Arg Ile Asp Ile Leu Val Asn Asn Gly Gly

| 80 | | | | | | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Met | Ser | Gln | Arg | Ser | Leu | Cys | Met | Asp | Thr | Ser | Leu | Asp | Val | Tyr | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Arg | Lys | Leu | Ile | Glu | Leu | Asn | Tyr | Leu | Gly | Thr | Val | Ser | Leu | Thr | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Lys | Cys | Val | Leu | Pro | His | Met | Ile | Glu | Arg | Lys | Gln | Gly | Lys | Ile | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Val | Thr | Val | Asn | Ser | Ile | Leu | Gly | Ile | Ile | Ser | Val | Pro | Leu | Ser | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Ile | Gly | Tyr | Cys | Ala | Ser | Lys | His | Ala | Leu | Arg | Gly | Phe | Phe | Asn | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Gly | Leu | Arg | Thr | Glu | Leu | Ala | Thr | Tyr | Pro | Gly | Ile | Ile | Val | Ser | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Asn | Ile | Cys | Pro | Gly | Pro | Val | Gln | Ser | Asn | Ile | Val | Glu | Asn | Ser | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Leu | Ala | Gly | Glu | Val | Thr | Lys | Thr | Ile | Gly | Asn | Asn | Gly | Asp | Gln | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Ser | His | Lys | Met | Thr | Thr | Ser | Arg | Cys | Val | Arg | Leu | Met | Leu | Ile | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Ser | Met | Ala | Asn | Asp | Leu | Lys | Glu | Val | Trp | Ile | Ser | Glu | Gln | Pro | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Phe | Leu | Leu | Val | Thr | Tyr | Leu | Trp | Gln | Tyr | Met | Pro | Thr | Trp | Ala | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Trp | Trp | Ile | Thr | Asn | Lys | Met | Gly | Lys | Lys | Arg | Ile | Glu | Asn | Phe | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Lys | Ser | Gly | Val | Asp | Ala | Asp | Ser | Ser | Tyr | Phe | Lys | Ile | Phe | Lys | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |

Thr Lys His Asp

<210> 125
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 125
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<210> 126
 <211> 19
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 126

ctgtgaatag catcctggg 19

<210> 127

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 127

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<210> 128

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 128

ctgtagacat ccaagctggt atcc 24

<210> 129

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 129

aagagtctgc atccacacca etc 23

<210> 130

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 130

acctgacgct actatggggcc gagtggcagg gacgacgccc agaattg 46

<210> 131

<211> 2365

<212> DNA

<213> Homo sapiens

<400> 131

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caatcaatcc aacagcatat tcggttgcat cttctacaca ctacagctat 150
tgttaggttg cctgcggaca cgctgggcct ctgtcctgat gctgctgagc 200
tccctgggtgt ctctcgtggg ttctgtctac ctggcctgga tcctgttctt 250
cgtgctctat gattttctgca ttgtttgtat caccacctat gctatcaacg 300
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gctaagaggc actgagccct caaccaagc caggctgacc tcatctgctt 400
tgctttgggc ttcaagccgc tcagcgtgcc tgtggacagc gtggccccgg 450
ccccccaag cctcaggagg gcaacacagt ccctggcgag tggccctggc 500
aggccagtgt gaggaggcaa ggagcccaca tctgcagcgg ctccctggtg 550
gcagacacct gggtcctcac tgctgcccac tgctttgaaa aggagcagc 600
aacagaactg aattcctggg cagtggctcct gggttctctg cagcgtgagg 650
gactcagccc tggggccgaa gaggtggggg tggtgcctt gcagttgcc 700
agggcctata accactacag ccagggtca gacctggccc tgctgcagct 750
cgcccccccc acgaccaca caccctctg cctgccccag cccgccatc 800
gcttccccct tggagcctcc tgctgggcca ctggctggga tcaggacacc 850
agtgatgctc ctgggacct acgcaatctg cgctgcgtc tcatcagtcg 900
ccccacatgt aactgtatct acaaccagct gcaccagcga cacctgtcca 950
acccggcccg gcctgggatg ctatgtgggg gccccagcc tggggtgcag 1000
ggccccctgtc agggagattc cgggggccct gtgctgtgcc tcgagcctga 1050
cggacactgg gttcaggctg gcatcatcag ctttgcata agctgtgccc 1100
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cccggatg agtgatgagg acagctgtgt agcctgtgga tccttgagga 1250
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ctgatgcacc agggacagct ggcctgtggc ggagccctgg tgcagagga 1350
ggcgggtgcta actgctgccc actgcttcat tgggcgccag gccccagagg 1400
aatggagcgt agggctgggg accagaccgg aggagtgggg cctgaagcag 1450

GenBank: F01470

ctcctcctgc atggagccta caccaccct gaggggggt acgacatggc 1500
cctcctgctg ctggcccagc ctgtgacact gggagccagc ctgcggcccc 1550
tctgcctgcc ctatcctgac caccacctgc ctgatgggga gcgtggctgg 1600
gttctgggac gggcccgccc aggagcaggc atcagctccc tccagacagt 1650
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cttgccaagg ccccgccagg ccggcgggtct tcaccgcgtt ccctgcctat 1900
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tttctttttt tggggggcag cagttttcct ttttttaaac ttaaataaat 2350
tgttacaaaa taaaa 2365

<210> 132
<211> 571
<212> PRT
<213> Homo sapiens

<400> 132
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Ala Trp Ile Leu Phe Phe Val Leu Tyr Asp Phe Cys Ile Val Cys
20 25 30
Ile Thr Thr Tyr Ala Ile Asn Val Ser Leu Met Trp Leu Ser Phe
35 40 45
Arg Lys Val Gln Glu Pro Gln Gly Lys Ala Lys Arg His Gly Asn
50 55 60
Thr Val Pro Gly Glu Trp Pro Trp Gln Ala Ser Val Arg Arg Gln
65 70 75

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Ala | His | Ile | Cys | Ser | Gly | Ser | Leu | Val | Ala | Asp | Thr | Trp | Val | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Thr | Ala | Ala | His | Cys | Phe | Glu | Lys | Ala | Ala | Ala | Thr | Glu | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asn | Ser | Trp | Ser | Val | Val | Leu | Gly | Ser | Leu | Gln | Arg | Glu | Gly | Leu | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ser | Pro | Gly | Ala | Glu | Glu | Val | Gly | Val | Ala | Ala | Leu | Gln | Leu | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Arg | Ala | Tyr | Asn | His | Tyr | Ser | Gln | Gly | Ser | Asp | Leu | Ala | Leu | Leu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gln | Leu | Ala | His | Pro | Thr | Thr | His | Thr | Pro | Leu | Cys | Leu | Pro | Gln | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Pro | Ala | His | Arg | Phe | Pro | Phe | Gly | Ala | Ser | Cys | Trp | Ala | Thr | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Trp | Asp | Gln | Asp | Thr | Ser | Asp | Ala | Pro | Gly | Thr | Leu | Arg | Asn | Leu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Arg | Leu | Arg | Leu | Ile | Ser | Arg | Pro | Thr | Cys | Asn | Cys | Ile | Tyr | Asn | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gln | Leu | His | Gln | Arg | His | Leu | Ser | Asn | Pro | Ala | Arg | Pro | Gly | Met | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Cys | Gly | Gly | Pro | Gln | Pro | Gly | Val | Gln | Gly | Pro | Cys | Gln | Gly | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Asp | Ser | Gly | Gly | Pro | Val | Leu | Cys | Leu | Glu | Pro | Asp | Gly | His | Trp | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Val | Gln | Ala | Gly | Ile | Ile | Ser | Phe | Ala | Ser | Ser | Cys | Ala | Gln | Glu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Asp | Ala | Pro | Val | Leu | Leu | Thr | Asn | Thr | Ala | Ala | His | Ser | Ser | Trp | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Leu | Gln | Ala | Arg | Val | Gln | Gly | Ala | Ala | Phe | Leu | Ala | Gln | Ser | Pro | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Glu | Thr | Pro | Glu | Met | Ser | Asp | Glu | Asp | Ser | Cys | Val | Ala | Cys | Gly | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Ser | Leu | Arg | Thr | Ala | Gly | Pro | Gln | Ala | Gly | Ala | Pro | Ser | Pro | Trp | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Pro | Trp | Glu | Ala | Arg | Leu | Met | His | Gln | Gly | Gln | Leu | Ala | Cys | Gly | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Gly | Ala | Leu | Val | Ser | Glu | Glu | Ala | Val | Leu | Thr | Ala | Ala | His | Cys | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Phe | Ile | Gly | Arg | Gln | Ala | Pro | Glu | Glu | Trp | Ser | Val | Gly | Leu | Gly | |

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 134

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<210> 135

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 135

ggctggcatc atcagctttg catcaagctg tgcccaggag gacgc 45

<210> 136

<211> 1998

<212> DNA

<213> Homo sapiens

<400> 136

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ggggcagcct tccaccacgg ggagcccagc tgtcagccgc ctcacaggaa 150
gatgctgcgt cggcggggca gccctggcat ggggtgtgcat gtgggtgcag 200
ccctgggagc actgtggttc tgccctcacag gagccctgga ggtccaggtc 250
cctgaagacc cagtgggtggc actgggtgggc accgatgcca cctgtgtctg 300
ctcctttctc cctgagcctg gcttcagcct ggcacagctc aacctcatct 350
ggcagctgac agataccaaa cagctggtgc acagctttgc tgagggccag 400
gaccagggca gcgcctatgc caaccgcacg gccctcttcc cggacctgct 450
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gccaacaag gacctgcggc caggggacac ggtgaccatc acgtgctcca 650
gctaccaggg ctaccctgag gctgaggtgt tctggcagga tgggcagggt 700
gtgcccctga ctggcaacgt gaccacgtcg cagatggcca acgagcaggg 750
cttgtttgat gtgcacagcg tccctgcgggt ggtgctgggt gcgaatggca 800
cctacagctg cctggtgcgc aaccccgctg tcgagcagga tgcgcacrgc 850

tctgtcacca tcacagggca gcctatgaca ttccccccag aggccctgtg 900
ggtgaccgtg gggctgtctg tctgtctcat tgcactgctg gtggccctgg 950
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<210> 137

<211> 316

<212> PRT

<213> Homo sapiens

<220>

<221> unsure

<222> 233

<223> unknown amino acid

<400> 137

Met Leu Arg Arg Arg Gly Ser Pro Gly Met Gly Val His Val Gly

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| Pro | Leu | Lys | His | Ser | Asp | Ser | Lys | Glu | Asp | Asp | Gly | Gln | Glu | Ile |
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<210> 138
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<220>
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<400> 138
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<210> 139
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<220>
 <223> Synthetic oligonucleotide probe

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 gctgtctgtc tgtctcattg 20

<210> 140
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<220>
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 ggacacagta tactgaccac 20

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<220>
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<220>
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<400> 142
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<210> 143
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 143
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<212> DNA
<213> Homo sapiens

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<221> unsure
<222> 1620, 1673
<223> unknown base

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<210> 145

<211> 211

<212> PRT

<213> Homo sapiens

<400> 145

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Val Leu Gln Lys Pro Phe Ile Cys His Arg Lys Thr Lys Gly Gly
35 40 45

Asp Leu Met Leu Val His Tyr Glu Gly Tyr Leu Glu Lys Asp Gly
50 55 60

Ser Leu Phe His Ser Thr His Lys His Asn Asn Gly Gln Pro Ile
65 70 75

Trp Phe Thr Leu Gly Ile Leu Glu Ala Leu Lys Gly Trp Asp Gln
80 85 90

Gly Leu Lys Gly Met Cys Val Gly Glu Lys Arg Lys Leu Ile Ile
95 100 105

Pro Pro Ala Leu Gly Tyr Gly Lys Glu Gly Lys Gly Lys Ile Pro
110 115 120

Pro Glu Ser Thr Leu Ile Phe Asn Ile Asp Leu Leu Glu Ile Arg
125 130 135

Asn Gly Pro Arg Ser His Glu Ser Phe Gln Glu Met Asp Leu Asn
140 145 150

Asp Asp Trp Lys Leu Ser Lys Asp Glu Val Lys Ala Tyr Leu Lys
155 160 165

Lys Glu Phe Glu Lys His Gly Ala Val Val Asn Glu Ser His His
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Asp Ala Leu Val Glu Asp Ile Phe Asp Lys Glu Asp Glu Asp Lys
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Asp Gly Phe Ile Ser Ala Arg Glu Phe Thr Tyr Lys His Asp Glu
200 205 210

Leu

<210> 146

<211> 26

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 146
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<210> 147
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 147
gcccagagca ggaggaatga tgagc 25

<210> 148
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 148
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<210> 149
<211> 2196
<212> DNA
<213> Homo sapiens

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<210> 150
 <211> 215
 <212> PRT
 <213> Homo sapiens

<400> 150

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| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Leu | Ser | Leu | Phe | Phe | Ser | Leu | Val | Pro | Pro | Gly | Arg | Ser | Met |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Glu | Val | Thr | Val | Pro | Ala | Thr | Leu | Asn | Val | Leu | Asn | Gly | Ser | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ala | Arg | Leu | Pro | Cys | Thr | Phe | Asn | Ser | Cys | Tyr | Thr | Val | Asn | His |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Lys | Gln | Phe | Ser | Leu | Asn | Trp | Thr | Tyr | Gln | Glu | Cys | Asn | Asn | Cys |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Glu | Glu | Met | Phe | Leu | Gln | Phe | Arg | Met | Lys | Ile | Ile | Asn | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Leu | Glu | Arg | Phe | Gln | Asp | Arg | Val | Glu | Phe | Ser | Gly | Asn | Pro |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Lys | Tyr | Asp | Val | Ser | Val | Met | Leu | Arg | Asn | Val | Gln | Pro | Glu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asp | Glu | Gly | Ile | Tyr | Asn | Cys | Tyr | Ile | Met | Asn | Pro | Pro | Asp | Arg |
| | | | | 125 | | | | | 130 | | | | | 135 |
| His | Arg | Gly | His | Gly | Lys | Ile | His | Leu | Gln | Val | Leu | Met | Glu | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Pro | Glu | Arg | Asp | Ser | Thr | Val | Ala | Val | Ile | Val | Gly | Ala | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Val | Gly | Gly | Phe | Leu | Ala | Val | Val | Ile | Leu | Val | Leu | Met | Val | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Lys | Cys | Val | Arg | Arg | Lys | Lys | Glu | Gln | Lys | Leu | Ser | Thr | Asp | Asp |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | Lys | Thr | Glu | Glu | Glu | Gly | Lys | Thr | Asp | Gly | Glu | Gly | Asn | Pro |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Asp | Asp | Gly | Ala | Lys | | | | | | | | | | |
| | | | | 215 | | | | | | | | | | |

<210> 151

<211> 524
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 103, 233
<223> unknown base

<400> 151
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gatgtgtcgg tgatgctgag aaacgtgcag ccggaggatg aggggattta 500
caactgctac atcatgaacc cccc 524

<210> 152
<211> 368
<212> DNA
<213> Homo sapiens

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<222> 56, 123
<223> unknown base

<400> 152
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ctacatcatg aaccccc 368

<210> 153
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 153
acggagcatg gaggtccaca gtac 24

<210> 154
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 154
gcacgtttct cagcatcacc gac 23

<210> 155
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<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 155
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<210> 156
<211> 2680
<212> DNA
<213> Homo sapiens

<400> 156
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<211> 412

<212> PRT

<213> Artificial

<400> 157

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| Met | Gly | Leu | His | Leu | Arg | Pro | Tyr | Arg | Val | Gly | Leu | Leu | Pro | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Leu | Leu | Phe | Leu | Leu | Leu | Leu | Leu | Met | Leu | Leu | Ala | Asp | Pro |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Ala | Leu | Pro | Ala | Gly | Arg | His | Pro | Pro | Val | Val | Leu | Val | Pro | Gly |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Asp | Leu | Gly | Asn | Gln | Leu | Glu | Ala | Lys | Leu | Asp | Lys | Pro | Thr | Val |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Val | His | Tyr | Leu | Cys | Ser | Lys | Lys | Thr | Glu | Ser | Tyr | Phe | Thr | Ile |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Trp | Leu | Asn | Leu | Glu | Leu | Leu | Leu | Pro | Val | Ile | Ile | Asp | Cys | Trp |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Ile | Asp | Asn | Ile | Arg | Leu | Val | Tyr | Asn | Lys | Thr | Ser | Arg | Ala | Thr |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Gln | Phe | Pro | Asp | Gly | Val | Asp | Val | Arg | Val | Pro | Gly | Phe | Gly | Lys |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 110 | | 115 | | 120 |
| Thr Phe Ser Leu | Glu Phe Leu Asp Pro | Ser Lys Ser Ser Val | Gly | | |
| | 125 | | 130 | | 135 |
| Ser Tyr Phe His | Thr Met Val Glu Ser | Leu Val Gly Trp Gly Tyr | | | |
| | 140 | | 145 | | 150 |
| Thr Arg Gly Glu | Asp Val Arg Gly Ala | Pro Tyr Asp Trp Arg Arg | | | |
| | 155 | | 160 | | 165 |
| Ala Pro Asn Glu | Asn Gly Pro Tyr Phe | Leu Ala Leu Arg Glu Met | | | |
| | 170 | | 175 | | 180 |
| Ile Glu Glu Met | Tyr Gln Leu Tyr Gly | Gly Pro Val Val Leu Val | | | |
| | 185 | | 190 | | 195 |
| Ala His Ser Met | Gly Asn Met Tyr Thr | Leu Tyr Phe Leu Gln Arg | | | |
| | 200 | | 205 | | 210 |
| Gln Pro Gln Ala | Trp Lys Asp Lys Tyr | Ile Arg Ala Phe Val Ser | | | |
| | 215 | | 220 | | 225 |
| Leu Gly Ala Pro | Trp Gly Gly Val Ala | Lys Thr Leu Arg Val Leu | | | |
| | 230 | | 235 | | 240 |
| Ala Ser Gly Asp | Asn Asn Arg Ile Pro | Val Ile Gly Pro Leu Lys | | | |
| | 245 | | 250 | | 255 |
| Ile Arg Glu Gln | Gln Arg Ser Ala Val | Ser Thr Ser Trp Leu Leu | | | |
| | 260 | | 265 | | 270 |
| Pro Tyr Asn Tyr | Thr Trp Ser Pro Glu | Lys Val Phe Val Gln Thr | | | |
| | 275 | | 280 | | 285 |
| Pro Thr Ile Asn | Tyr Thr Leu Arg Asp | Tyr Arg Lys Phe Phe Gln | | | |
| | 290 | | 295 | | 300 |
| Asp Ile Gly Phe | Glu Asp Gly Trp Leu | Met Arg Gln Asp Thr Glu | | | |
| | 305 | | 310 | | 315 |
| Gly Leu Val Glu | Ala Thr Met Pro Pro | Gly Val Gln Leu His Cys | | | |
| | 320 | | 325 | | 330 |
| Leu Tyr Gly Thr | Gly Val Pro Thr Pro | Asp Ser Phe Tyr Tyr Glu | | | |
| | 335 | | 340 | | 345 |
| Ser Phe Pro Asp | Arg Asp Pro Lys Ile | Cys Phe Gly Asp Gly Asp | | | |
| | 350 | | 355 | | 360 |
| Gly Thr Val Asn | Leu Lys Ser Ala Leu | Gln Cys Gln Ala Trp Gln | | | |
| | 365 | | 370 | | 375 |
| Ser Arg Gln Glu | His Gln Val Leu Leu | Gln Glu Leu Pro Gly Ser | | | |
| | 380 | | 385 | | 390 |
| Glu His Ile Glu | Met Leu Ala Asn Ala | Thr Thr Leu Ala Tyr Leu | | | |
| | 395 | | 400 | | 405 |

Lys Arg Val Leu Leu Gly Pro
410

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ctggggctac acacggggtg agg 23

<210> 159

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 159

ggtgccgctg cagaaagtag agcg 24

<210> 160

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 161

<211> 1512

<212> DNA

<213> Homo sapiens

<400> 161

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gcggcgcttc ctgacgcagc cgcaggtggt ggcgcgcgcc gtgtgcttgg 150

tcttcgcctt gatcgtgttc tctgcacat atggtgagg ctacagcaat 200

gccacagagt ctaagcagat gtactgcgtg ttcaaccgca acgaggatgc 250

ctgcgcgtat ggcagtgcca tcgggggtgct ggccttcctg gcctcggcct 300

tcttcttggg ggtcgacgcg tatttcccc agatcagcaa cgccactgac 350

cgcaagtacc tggtcattgg tgacctgctc ttctcagctc tctggacctt 400

cctgtgggttt gttgggtttct gcttcctcac caaccagtgg gcagtcacca 450
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 ctaccagccg cccctgtgt actgagtggc ggtagcgtg ggaaggggga 750
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 cctgtgcccga gagggttca gtcagccgt cactcctcca gggcactttt 950
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 ccgcctgcag tggctagaag ccagcaggtg cccatgtgct actgacaagt 1050
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 gtgccccatg gctcccagac tctgtctgtg ccgagtgtat tataaaatcg 1450
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 tctcattcaa ag 1512

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 <211> 224
 <212> PRT
 <213> Homo sapiens

<400> 162
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 Asp Leu Arg Arg Phe Leu Thr Gln Pro Gln Val Val Ala Arg Ala
 20 25 30

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Cys | Leu | Val | Phe | Ala | Leu | Ile | Val | Phe | Ser | Cys | Ile | Tyr | Gly | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Glu | Gly | Tyr | Ser | Asn | Ala | His | Glu | Ser | Lys | Gln | Met | Tyr | Cys | Val | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Phe | Asn | Arg | Asn | Glu | Asp | Ala | Cys | Arg | Tyr | Gly | Ser | Ala | Ile | Gly | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Leu | Ala | Phe | Leu | Ala | Ser | Ala | Phe | Phe | Leu | Val | Val | Asp | Ala | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Tyr | Phe | Pro | Gln | Ile | Ser | Asn | Ala | Thr | Asp | Arg | Lys | Tyr | Leu | Val | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ile | Gly | Asp | Leu | Leu | Phe | Ser | Ala | Leu | Trp | Thr | Phe | Leu | Trp | Phe | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Val | Gly | Phe | Cys | Phe | Leu | Thr | Asn | Gln | Trp | Ala | Val | Thr | Asn | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Lys | Asp | Val | Leu | Val | Gly | Ala | Asp | Ser | Val | Arg | Ala | Ala | Ile | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Ser | Phe | Phe | Ser | Ile | Phe | Ser | Trp | Gly | Val | Leu | Ala | Ser | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | Tyr | Gln | Arg | Tyr | Lys | Ala | Gly | Val | Asp | Asp | Phe | Ile | Gln | Asn | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Tyr | Val | Asp | Pro | Thr | Pro | Asp | Pro | Asn | Thr | Ala | Tyr | Ala | Ser | Tyr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Pro | Gly | Ala | Ser | Val | Asp | Asn | Tyr | Gln | Gln | Pro | Pro | Phe | Thr | Gln | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Asn | Ala | Glu | Thr | Thr | Glu | Gly | Tyr | Gln | Pro | Pro | Pro | Val | Tyr | | |
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<210> 163
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 <223> Synthetic oligonucleotide probe

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<210> 165
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<220>
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ctgaaggatga tggctgccct cac 23

<210> 166
<211> 23
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<220>
<223> Synthetic oligonucleotide probe

<400> 166
ccaggaggct catgggaaag tcc 23

<210> 167
<211> 50
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<210> 168
<211> 3143
<212> DNA
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<210> 169
 <211> 802
 <212> PRT
 <213> Homo sapiens
 <400> 169

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Pro | Val | Ala | Glu | Ala | Pro | Gln | Val | Ala | Gly | Gly | Gln | Gly | Asp | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Gly | Asp | Gly | Glu | Glu | Ala | Glu | Pro | Glu | Gly | Met | Phe | Lys | Ala | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Cys | Glu | Asp | Ser | Lys | Arg | Lys | Ala | Arg | Gly | Tyr | Leu | Arg | Leu | Val | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Pro | Leu | Phe | Val | Leu | Leu | Ala | Leu | Leu | Val | Leu | Ala | Ser | Ala | Gly | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Val | Leu | Leu | Trp | Tyr | Phe | Leu | Gly | Tyr | Lys | Ala | Glu | Val | Met | Val | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Gln | Val | Tyr | Ser | Gly | Ser | Leu | Arg | Val | Leu | Asn | Arg | His | Phe | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ser | Gln | Asp | Leu | Thr | Arg | Arg | Glu | Ser | Ser | Ala | Phe | Arg | Ser | Glu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Thr | Ala | Lys | Ala | Gln | Lys | Met | Leu | Lys | Glu | Leu | Ile | Thr | Ser | Thr | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Arg | Leu | Gly | Thr | Tyr | Tyr | Asn | Ser | Ser | Ser | Val | Tyr | Ser | Phe | Gly | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Glu | Gly | Pro | Leu | Thr | Cys | Phe | Phe | Trp | Phe | Ile | Leu | Gln | Ile | Pro | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Glu | His | Arg | Arg | Leu | Met | Leu | Ser | Pro | Glu | Val | Val | Gln | Ala | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Val | Glu | Glu | Leu | Leu | Ser | Thr | Val | Asn | Ser | Ser | Ala | Ala | Val | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Pro | Tyr | Arg | Ala | Glu | Tyr | Glu | Val | Asp | Pro | Glu | Gly | Leu | Val | Ile | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Glu | Ala | Ser | Val | Lys | Asp | Ile | Ala | Ala | Leu | Asn | Ser | Thr | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gly | Cys | Tyr | Arg | Tyr | Ser | Tyr | Val | Gly | Gln | Gly | Gln | Val | Leu | Arg | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Lys | Gly | Pro | Asp | His | Leu | Ala | Ser | Ser | Cys | Leu | Trp | His | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gln | Gly | Pro | Lys | Asp | Leu | Met | Leu | Lys | Leu | Arg | Leu | Glu | Trp | Thr | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Ala | Glu | Cys | Arg | Asp | Arg | Leu | Ala | Met | Tyr | Asp | Val | Ala | Gly | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Pro | Leu | Glu | Lys | Arg | Leu | Ile | Thr | Ser | Val | Tyr | Gly | Cys | Ser | Arg | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gln | Glu | Pro | Val | Val | Glu | Val | Leu | Ala | Ser | Gly | Ala | Ile | Met | Ala | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 290 | | | | | 295 | | | | | 300 |
| Val | Val | Trp | Lys | Lys 305 | Gly | Leu | His | Ser | Tyr 310 | Tyr | Asp | Pro | Phe | Val 315 |
| Leu | Ser | Val | Gln | Pro 320 | Val | Val | Phe | Gln | Ala 325 | Cys | Glu | Val | Asn | Leu 330 |
| Thr | Leu | Asp | Asn | Arg 335 | Leu | Asp | Ser | Gln | Gly 340 | Val | Leu | Ser | Thr | Pro 345 |
| Tyr | Phe | Pro | Ser | Tyr 350 | Tyr | Ser | Pro | Gln | Thr 355 | His | Cys | Ser | Trp | His 360 |
| Leu | Thr | Val | Pro | Ser 365 | Leu | Asp | Tyr | Gly | Leu 370 | Ala | Leu | Trp | Phe | Asp 375 |
| Ala | Tyr | Ala | Leu | Arg 380 | Arg | Gln | Lys | Tyr | Asp 385 | Leu | Pro | Cys | Thr | Gln 390 |
| Gly | Gln | Trp | Thr | Ile 395 | Gln | Asn | Arg | Arg | Leu 400 | Cys | Gly | Leu | Arg | Ile 405 |
| Leu | Gln | Pro | Tyr | Ala 410 | Glu | Arg | Ile | Pro | Val 415 | Val | Ala | Thr | Ala | Gly 420 |
| Ile | Thr | Ile | Asn | Phe 425 | Thr | Ser | Gln | Ile | Ser 430 | Leu | Thr | Gly | Pro | Gly 435 |
| Val | Arg | Val | His | Tyr 440 | Gly | Leu | Tyr | Asn | Gln 445 | Ser | Asp | Pro | Cys | Pro 450 |
| Gly | Glu | Phe | Leu | Cys 455 | Ser | Val | Asn | Gly | Leu 460 | Cys | Val | Pro | Ala | Cys 465 |
| Asp | Gly | Val | Lys | Asp 470 | Cys | Pro | Asn | Gly | Leu 475 | Asp | Glu | Arg | Asn | Cys 480 |
| Val | Cys | Arg | Ala | Thr 485 | Phe | Gln | Cys | Lys | Glu 490 | Asp | Ser | Thr | Cys | Ile 495 |
| Ser | Leu | Pro | Lys | Val 500 | Cys | Asp | Gly | Gln | Pro 505 | Asp | Cys | Leu | Asn | Gly 510 |
| Ser | Asp | Glu | Glu | Gln 515 | Cys | Gln | Glu | Gly | Val 520 | Pro | Cys | Gly | Thr | Phe 525 |
| Thr | Phe | Gln | Cys | Glu 530 | Asp | Arg | Ser | Cys | Val 535 | Lys | Lys | Pro | Asn | Pro 540 |
| Gln | Cys | Asp | Gly | Arg 545 | Pro | Asp | Cys | Arg | Asp 550 | Gly | Ser | Asp | Glu | Glu 555 |
| His | Cys | Asp | Cys | Gly 560 | Leu | Gln | Gly | Pro | Ser 565 | Ser | Arg | Ile | Val | Gly 570 |
| Gly | Ala | Val | Ser | Ser 575 | Glu | Gly | Glu | Trp | Pro 580 | Trp | Gln | Ala | Ser | Leu 585 |

Gln Val Arg Gly Arg His Ile Cys Gly Gly Ala Leu Ile Ala Asp
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 Arg Trp Val Ile Thr Ala Ala His Cys Phe Gln Glu Asp Ser Met
 605 615
 Ala Ser Thr Val Leu Trp Thr Val Phe Leu Gly Lys Val Trp Gln
 620 630
 Asn Ser Arg Trp Pro Gly Glu Val Ser Phe Lys Val Ser Arg Leu
 635 645
 Leu Leu His Pro Tyr His Glu Glu Asp Ser His Asp Tyr Asp Val
 650 660
 Ala Leu Leu Gln Leu Asp His Pro Val Val Arg Ser Ala Ala Val
 665 675
 Arg Pro Val Cys Leu Pro Ala Arg Ser His Phe Phe Glu Pro Gly
 680 690
 Leu His Cys Trp Ile Thr Gly Trp Gly Ala Leu Arg Glu Gly Gly
 695 705
 Pro Ile Ser Asn Ala Leu Gln Lys Val Asp Val Gln Leu Ile Pro
 710 720
 Gln Asp Leu Cys Ser Glu Ala Tyr Arg Tyr Gln Val Thr Pro Arg
 725 735
 Met Leu Cys Ala Gly Tyr Arg Lys Gly Lys Lys Asp Ala Cys Gln
 740 750
 Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Ala Leu Ser Gly Arg
 755 765
 Trp Phe Leu Ala Gly Leu Val Ser Trp Gly Leu Gly Cys Gly Arg
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 Pro Asn Tyr Phe Gly Val Tyr Thr Arg Ile Thr Gly Val Ile Ser
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 Trp Ile Gln Gln Val Val Thr
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aggcaggac acagagtcca ttcac 25

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aaaaaaaaaa 1510

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<211> 354

<212> PRT

<213> Homo sapiens

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| Met | Ser | Asn | Ser | Val | Pro | Leu | Leu | Cys | Phe | Trp | Ser | Leu | Cys | Tyr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Phe | Ala | Ala | Gly | Ser | Pro | Val | Pro | Phe | Gly | Pro | Glu | Gly | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Glu | Asp | Lys | Leu | His | Lys | Pro | Lys | Ala | Thr | Gln | Thr | Glu | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Pro | Ser | Val | Arg | Phe | Asn | Leu | Arg | Thr | Ser | Lys | Asp | Pro | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Glu | Gly | Cys | Tyr | Leu | Ser | Val | Gly | His | Ser | Gln | Pro | Leu | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Cys | Ser | Phe | Asn | Met | Thr | Ala | Lys | Thr | Phe | Phe | Ile | Ile | His |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Trp | Thr | Met | Ser | Gly | Ile | Phe | Glu | Asn | Trp | Leu | His | Lys | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ser | Ala | Leu | His | Thr | Arg | Glu | Lys | Asp | Ala | Asn | Val | Val | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asp | Trp | Leu | Pro | Leu | Ala | His | Gln | Leu | Tyr | Thr | Asp | Ala | Val |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Asn | Thr | Arg | Val | Val | Gly | His | Ser | Ile | Ala | Arg | Met | Leu | Asp |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Leu | Gln | Glu | Lys | Asp | Asp | Phe | Ser | Leu | Gly | Asn | Val | His | Leu |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Gly | Tyr | Ser | Leu | Gly | Ala | His | Val | Ala | Gly | Tyr | Ala | Gly | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Val | Lys | Gly | Thr | Val | Gly | Arg | Ile | Thr | Gly | Leu | Asp | Pro | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Met | Phe | Glu | Gly | Ala | Asp | Ile | His | Lys | Arg | Leu | Ser | Pro |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Asp | Ala | Asp | Phe | Val | Asp | Val | Leu | His | Thr | Tyr | Thr | Arg | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gly | Leu | Ser | Ile | Gly | Ile | Gln | Met | Pro | Val | Gly | His | Ile | Asp |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Tyr | Pro | Asn | Gly | Gly | Asp | Phe | Gln | Pro | Gly | Cys | Gly | Leu | Asn |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asp | Val | Leu | Gly | Ser | Ile | Ala | Tyr | Gly | Thr | Ile | Thr | Glu | Val | Val |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Lys | Cys | Glu | His | Glu | Arg | Ala | Val | His | Leu | Phe | Val | Asp | Ser | Leu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Val | Asn | Gln | Asp | Lys | Pro | Ser | Phe | Ala | Phe | Gln | Cys | Thr | Asp | Ser |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Asn | Arg | Phe | Lys | Lys | Gly | Ile | Cys | Leu | Ser | Cys | Arg | Lys | Asn | Arg |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Cys | Asn | Ser | Ile | Gly | Tyr | Asn | Ala | Lys | Lys | Met | Arg | Asn | Lys | Arg |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Asn | Ser | Lys | Met | Tyr | Leu | Lys | Thr | Arg | Ala | Gly | Met | Pro | Phe | Arg |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Gly | Asn | Leu | Gln | Ser | Leu | Glu | Cys | Pro | | | | | | |
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<211> 713

<212> PRT

<213> Homo sapiens

<400> 183

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| Met | Leu | Leu | Ala | Thr | Leu | Leu | Leu | Leu | Leu | Leu | Gly | Gly | Ala | Leu | 1 | 5 | 10 | 15 |
| Ala | His | Pro | Asp | Arg | Ile | Ile | Phe | Pro | Asn | His | Ala | Cys | Glu | Asp | 20 | 25 | 30 | |
| Pro | Pro | Ala | Val | Leu | Leu | Glu | Val | Gln | Gly | Thr | Leu | Gln | Arg | Pro | 35 | 40 | 45 | |
| Leu | Val | Arg | Asp | Ser | Arg | Thr | Ser | Pro | Ala | Asn | Cys | Thr | Trp | Leu | 50 | 55 | 60 | |
| Ile | Leu | Gly | Ser | Lys | Glu | Gln | Thr | Val | Thr | Ile | Arg | Phe | Gln | Lys | 65 | 70 | 75 | |
| Leu | His | Leu | Ala | Cys | Gly | Ser | Glu | Arg | Leu | Thr | Leu | Arg | Ser | Pro | 80 | 85 | 90 | |
| Leu | Gln | Pro | Leu | Ile | Ser | Leu | Cys | Glu | Ala | Pro | Pro | Ser | Pro | Leu | 95 | 100 | 105 | |
| Gln | Leu | Pro | Gly | Gly | Asn | Val | Thr | Ile | Thr | Tyr | Ser | Tyr | Ala | Gly | 110 | 115 | 120 | |
| Ala | Arg | Ala | Pro | Met | Gly | Gln | Gly | Phe | Leu | Leu | Ser | Tyr | Ser | Gln | 125 | 130 | 135 | |
| Asp | Trp | Leu | Met | Cys | Leu | Gln | Glu | Glu | Phe | Gln | Cys | Leu | Asn | His | 140 | 145 | 150 | |
| Arg | Cys | Val | Ser | Ala | Val | Gln | Arg | Cys | Asp | Gly | Val | Asp | Ala | Cys | 155 | 160 | 165 | |
| Gly | Asp | Gly | Ser | Asp | Glu | Ala | Gly | Cys | Ser | Ser | Asp | Pro | Phe | Pro | | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Leu | Thr | Pro | Arg 185 | Pro | Val | Pro | Ser | Leu 190 | Pro | Cys | Asn | Val | Thr 195 |
| Leu | Glu | Asp | Phe | Tyr 200 | Gly | Val | Phe | Ser | Ser 205 | Pro | Gly | Tyr | Thr | His 210 |
| Leu | Ala | Ser | Val | Ser 215 | His | Pro | Gln | Ser | Cys 220 | His | Trp | Leu | Leu | Asp 225 |
| Pro | His | Asp | Gly | Arg 230 | Arg | Leu | Ala | Val | Arg 235 | Phe | Thr | Ala | Leu | Asp 240 |
| Leu | Gly | Phe | Gly | Asp 245 | Ala | Val | His | Val | Tyr 250 | Asp | Gly | Pro | Gly | Pro 255 |
| Pro | Glu | Ser | Ser | Arg 260 | Leu | Leu | Arg | Ser | Leu 265 | Thr | His | Phe | Ser | Asn 270 |
| Gly | Lys | Ala | Val | Thr 275 | Val | Glu | Thr | Leu | Ser 280 | Gly | Gln | Ala | Val | Val 285 |
| Ser | Tyr | His | Thr | Val 290 | Ala | Trp | Ser | Asn | Gly 295 | Arg | Gly | Phe | Asn | Ala 300 |
| Thr | Tyr | His | Val | Arg 305 | Gly | Tyr | Cys | Leu | Pro 310 | Trp | Asp | Arg | Pro | Cys 315 |
| Gly | Leu | Gly | Ser | Gly 320 | Leu | Gly | Ala | Gly | Glu 325 | Gly | Leu | Gly | Glu | Arg 330 |
| Cys | Tyr | Ser | Glu | Ala 335 | Gln | Arg | Cys | Asp | Gly 340 | Ser | Trp | Asp | Cys | Ala 345 |
| Asp | Gly | Thr | Asp | Glu 350 | Glu | Asp | Cys | Pro | Gly 355 | Cys | Pro | Pro | Gly | His 360 |
| Phe | Pro | Cys | Gly | Ala 365 | Ala | Gly | Thr | Ser | Gly 370 | Ala | Thr | Ala | Cys | Tyr 375 |
| Leu | Pro | Ala | Asp | Arg 380 | Cys | Asn | Tyr | Gln | Thr 385 | Phe | Cys | Ala | Asp | Gly 390 |
| Ala | Asp | Glu | Arg | Arg 395 | Cys | Arg | His | Cys | Gln 400 | Pro | Gly | Asn | Phe | Arg 405 |
| Cys | Arg | Asp | Glu | Lys 410 | Cys | Val | Tyr | Glu | Thr 415 | Trp | Val | Cys | Asp | Gly 420 |
| Gln | Pro | Asp | Cys | Ala 425 | Asp | Gly | Ser | Asp | Glu 430 | Trp | Asp | Cys | Ser | Tyr 435 |
| Val | Leu | Pro | Arg | Lys 440 | Val | Ile | Thr | Ala | Ala 445 | Val | Ile | Gly | Ser | Leu 450 |
| Val | Cys | Gly | Leu | Leu 455 | Leu | Val | Ile | Ala | Leu 460 | Gly | Cys | Thr | Cys | Lys 465 |

Leu Tyr Ala Ile Arg Thr Gln Glu Tyr Ser Ile Phe Ala Pro Leu
470 475 480

Ser Arg Met Glu Ala Glu Ile Val Gln Gln Gln Ala Pro Pro Ser
485 490 495

Tyr Gly Gln Leu Ile Ala Gln Gly Ala Ile Pro Pro Val Glu Asp
500 505 510

Phe Pro Thr Glu Asn Pro Asn Asp Asn Ser Val Leu Gly Asn Leu
515 520 525

Arg Ser Leu Leu Gln Ile Leu Arg Gln Asp Met Thr Pro Gly Gly
530 535 540

Gly Pro Gly Ala Arg Arg Arg Gln Arg Gly Arg Leu Met Arg Arg
545 550 555

Leu Val Arg Arg Leu Arg Arg Trp Gly Leu Leu Pro Arg Thr Asn
560 565 570

Thr Pro Ala Arg Ala Ser Glu Ala Arg Ser Gln Val Thr Pro Ser
575 580 585

Ala Ala Pro Leu Glu Ala Leu Asp Gly Gly Thr Gly Pro Ala Arg
590 595 600

Glu Gly Gly Ala Val Gly Gly Gln Asp Gly Glu Gln Ala Pro Pro
605 610 615

Leu Pro Ile Lys Ala Pro Leu Pro Ser Ala Ser Thr Ser Pro Ala
620 625 630

Pro Thr Thr Val Pro Glu Ala Pro Gly Pro Leu Pro Ser Leu Pro
635 640 645

Leu Glu Pro Ser Leu Leu Ser Gly Val Val Gln Ala Leu Arg Gly
650 655 660

Arg Leu Leu Pro Ser Leu Gly Pro Pro Gly Pro Thr Arg Ser Pro
665 670 675

Pro Gly Pro His Thr Ala Val Leu Ala Leu Glu Asp Glu Asp Asp
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695 700 705

Ala Glu Asp Glu Pro Leu Leu Thr
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 gaaagtgtg ctgctgggtc tgcagacgcg atggataacg tgcagccgaa 150

aataaaacat cgcccccttct gcttcagtgt gaaaggccac gtgaagatgc 200
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agttggtgga ggggtgtttg cacttgtgac agcagtatgc tgtcttgccg 500
acgggggccct tatttaccgg aagcttctgt tcaatcccag cggtccttac 550
cagaaaaagc ctgtgcatga aaaaaaagaa gttttgtaat tttatattac 600
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aaaaaaaaaa aaa 663

<210> 190

<211> 152

<212> PRT

<213> Homo sapiens

<400> 190

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Asn | Val | Gln | Pro | Lys | Ile | Lys | His | Arg | Pro | Phe | Cys | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Val | Lys | Gly | His | Val | Lys | Met | Leu | Arg | Leu | Ala | Leu | Thr | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Ser | Met | Thr | Phe | Phe | Ile | Ile | Ala | Gln | Ala | Pro | Glu | Pro | Tyr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ile | Val | Ile | Thr | Gly | Phe | Glu | Val | Thr | Val | Ile | Leu | Phe | Phe | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Leu | Tyr | Val | Leu | Arg | Leu | Asp | Arg | Leu | Met | Lys | Trp | Leu | Phe |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Trp | Pro | Leu | Leu | Asp | Ile | Ile | Asn | Ser | Leu | Val | Thr | Thr | Val | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Met | Leu | Ile | Val | Ser | Val | Leu | Ala | Leu | Ile | Pro | Glu | Thr | Thr | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Thr | Val | Gly | Gly | Gly | Val | Phe | Ala | Leu | Val | Thr | Ala | Val | Cys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Cys | Leu | Ala | Asp | Gly | Ala | Leu | Ile | Tyr | Arg | Lys | Leu | Leu | Phe | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Pro | Ser | Gly | Pro | Tyr | Gln | Lys | Lys | Pro | Val | His | Glu | Lys | Lys | Glu |
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Val Leu

<210> 191
<211> 495
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 78, 212, 234, 487
<223> unknown base

<400> 191
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ctgctgctgg gtctgcagac gcgatggata acgtgcagcc gaaaataaaa 150
catcgcccct tctgcttcag tgtgaaaggc cacgtgaaga tgctgcggct 200
ggcactaact gngacatcta tgaccttttt tatnatcgca caagcccctg 250
aaccatataat tgttatcaact ggatttgaag tcaccgttat cttatttttc 300
atacttttat atgtactcag acttgatcga ttaatgaagt ggttattttg 350
gcctttgctt gatattatca actcactggc aacaacagta ttcattgctca 400
tcgtatctgt gttggcactg ataccagaaa ccacaacatt gacagttggc 450
ggaggggtgt ttgcacttgt gacagcagta tgctgtnttg ccgac 495

<210> 192
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 192
cgttttgcag aacctactca ggcag 25

<210> 193
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 193
cctccaccaa ctgtcaatgt tgtgg 25

<210> 194
<211> 40

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 194
aaagtgtctgc tgctgggtct gcagacgcga tggataacgt 40

<210> 195
<211> 1879
<212> DNA
<213> Homo sapien

<400> 195
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cactggccccg ggcgtgctg ctgcctctgc tggcccagtg gtcctgcgc 150
gccgccccgg agctggcccc cgcgcccttc acgtgcccc tccgggtggc 200
cgcggccacg aaccgcgtag ttgcgcccac cccgggaccc gggaccctg 250
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tccccgcggy gcgccccaa cttcttggcc atggtagaca acctgcaggg 350
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agaagctaca gattctcggt gacactggaa gcagtaactt tgccgtggca 450
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aatacttctt ttcttgtcaa cattgccact atttttgaat cagagaattt 650
ctttttgcct gggattaaat ggaatggaat acttggccta gcttatgcc 700
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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Ile | Leu | Val | Asp | Thr | Gly | Ser | Ser | Asn | Phe | Ala | Val | Ala | Gly | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Thr | Pro | His | Ser | Tyr | Ile | Asp | Thr | Tyr | Phe | Asp | Thr | Glu | Arg | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ser | Thr | Tyr | Arg | Ser | Lys | Gly | Phe | Asp | Val | Thr | Val | Lys | Tyr | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gln | Gly | Ser | Trp | Thr | Gly | Phe | Val | Gly | Glu | Asp | Leu | Val | Thr | Ile | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Pro | Lys | Gly | Phe | Asn | Thr | Ser | Phe | Leu | Val | Asn | Ile | Ala | Thr | Ile | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Phe | Glu | Ser | Glu | Asn | Phe | Phe | Leu | Pro | Gly | Ile | Lys | Trp | Asn | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Leu | Gly | Leu | Ala | Tyr | Ala | Thr | Leu | Ala | Lys | Pro | Ser | Ser | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Glu | Thr | Phe | Phe | Asp | Ser | Leu | Val | Thr | Gln | Ala | Asn | Ile | Pro | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Asn | Val | Phe | Ser | Met | Gln | Met | Cys | Gly | Ala | Gly | Leu | Pro | Val | Ala | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gly | Ser | Gly | Thr | Asn | Gly | Gly | Ser | Leu | Val | Leu | Gly | Gly | Ile | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Pro | Ser | Leu | Tyr | Lys | Gly | Asp | Ile | Trp | Tyr | Thr | Pro | Ile | Lys | Glu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Glu | Trp | Tyr | Tyr | Gln | Ile | Glu | Ile | Leu | Lys | Leu | Glu | Ile | Gly | Gly | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gln | Ser | Leu | Asn | Leu | Asp | Cys | Arg | Glu | Tyr | Asn | Ala | Asp | Lys | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ile | Val | Asp | Ser | Gly | Thr | Thr | Leu | Leu | Arg | Leu | Pro | Gln | Lys | Val | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Phe | Asp | Ala | Val | Val | Glu | Ala | Val | Ala | Arg | Ala | Ser | Leu | Ile | Pro | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Glu | Phe | Ser | Asp | Gly | Phe | Trp | Thr | Gly | Ser | Gln | Leu | Ala | Cys | Trp | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Thr | Asn | Ser | Glu | Thr | Pro | Trp | Ser | Tyr | Phe | Pro | Lys | Ile | Ser | Ile | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Tyr | Leu | Arg | Asp | Glu | Asn | Ser | Ser | Arg | Ser | Phe | Arg | Ile | Thr | Ile | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Leu | Pro | Gln | Leu | Tyr | Ile | Gln | Pro | Met | Met | Gly | Ala | Gly | Leu | Asn | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Tyr | Glu | Cys | Tyr | Arg | Phe | Gly | Ile | Ser | Pro | Ser | Thr | Asn | Ala | Leu | |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 395 | | 400 | | 405 |
| Val Ile Gly Ala Thr Val Met Glu Gly Phe Tyr Val Ile Phe Asp | | | | | |
| | 410 | | 415 | | 420 |
| Arg Ala Gln Lys Arg Val Gly Phe Ala Ala Ser Pro Cys Ala Glu | | | | | |
| | 425 | | 430 | | 435 |
| Ile Ala Gly Ala Ala Val Ser Glu Ile Ser Gly Pro Phe Ser Thr | | | | | |
| | 440 | | 445 | | 450 |
| Glu Asp Val Ala Ser Asn Cys Val Pro Ala Gln Ser Leu Ser Glu | | | | | |
| | 455 | | 460 | | 465 |
| Pro Ile Leu Trp Ile Val Ser Tyr Ala Leu Met Ser Val Cys Gly | | | | | |
| | 470 | | 475 | | 480 |
| Ala Ile Leu Leu Val Leu Ile Val Leu Leu Leu Leu Pro Phe Arg | | | | | |
| | 485 | | 490 | | 495 |
| Cys Gln Arg Arg Pro Arg Asp Pro Glu Val Val Asn Asp Glu Ser | | | | | |
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| Ser Leu Val Arg His Arg Trp Lys | | | | | |
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<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 198

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<220>

<223> Synthetic oligonucleotide probe

<400> 198

ggaaattgga ggccaaagc 19

<210> 199

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 199

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<210> 200
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 200
gccttggtc gttctcttc 19

<210> 201
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 201
ggctctgtgc ctggatgg 18

<210> 202
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 202
gacaagacta cctccgttg tc 22

<210> 203
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 203
tgatgcacag ttcagcacct gttg 24

<210> 204
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 204
cgctccaagg gctttgacgt cacagtgaag tacacacaag gaagctg 47

<210> 205
<211> 1939
<212> DNA

<213> Homo sapiens

<400> 205

cgctccgcc ttccgaggct gacgcgcccg ggcgccgttc caggcctgtg 50
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gggcgggagc cgggaggcgc ggccggcatg gaggcgctgc tgctgggcgc 150
ggggttgctg ctgggcgctt acgtgcttgt ctactacaac ctggtgaagg 200
ccccgccgtg cggcggcatg ggcaacctgc ggggccgcac ggccgtggtc 250
acgggcgcca acagcggcat cggaaagatg acggcgctgg agctggcgcg 300
ccggggagcg cgcgtgggtg tggcctgccg cagccaggag cgcggggagg 350
cggctgcctt cgacctccgc caggagagtg ggaacaatga ggtcatcttc 400
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 taaagcgcgt tgaccgccaa aaaaaaaaaa aaaaaaaaaa 1939

<210> 206

<211> 377

<212> PRT

<213> Homo sapiens

<400> 206

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Ala | Leu | Leu | Leu | Gly | Ala | Gly | Leu | Leu | Leu | Gly | Ala | Tyr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Leu | Val | Tyr | Tyr | Asn | Leu | Val | Lys | Ala | Pro | Pro | Cys | Gly | Gly |
| | | | 20 | | | | | 25 | | | | | | 30 |
| Met | Gly | Asn | Leu | Arg | Gly | Arg | Thr | Ala | Val | Val | Thr | Gly | Ala | Asn |
| | | | 35 | | | | | 40 | | | | | | 45 |
| Ser | Gly | Ile | Gly | Lys | Met | Thr | Ala | Leu | Glu | Leu | Ala | Arg | Arg | Gly |
| | | | 50 | | | | | 55 | | | | | | 60 |
| Ala | Arg | Val | Val | Leu | Ala | Cys | Arg | Ser | Gln | Glu | Arg | Gly | Glu | Ala |
| | | | 65 | | | | | 70 | | | | | | 75 |
| Ala | Ala | Phe | Asp | Leu | Arg | Gln | Glu | Ser | Gly | Asn | Asn | Glu | Val | Ile |
| | | | 80 | | | | | 85 | | | | | | 90 |
| Phe | Met | Ala | Leu | Asp | Leu | Ala | Ser | Leu | Ala | Ser | Val | Arg | Ala | Phe |
| | | | 95 | | | | | 100 | | | | | | 105 |
| Ala | Thr | Ala | Phe | Leu | Ser | Ser | Glu | Pro | Arg | Leu | Asp | Ile | Leu | Ile |
| | | | 110 | | | | | 115 | | | | | | 120 |
| His | Asn | Ala | Gly | Ile | Ser | Ser | Cys | Gly | Arg | Thr | Arg | Glu | Ala | Phe |
| | | | 125 | | | | | 130 | | | | | | 135 |
| Asn | Leu | Leu | Leu | Arg | Val | Asn | His | Ile | Gly | Pro | Phe | Leu | Leu | Thr |
| | | | 140 | | | | | 145 | | | | | | 150 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| His | Leu | Leu | Leu | Pro | Cys | Leu | Lys | Ala | Cys | Ala | Pro | Ser | Arg | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Val | Val | Ala | Ser | Ala | Ala | His | Cys | Arg | Gly | Arg | Leu | Asp | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Arg | Leu | Asp | Arg | Pro | Val | Val | Gly | Trp | Arg | Gln | Glu | Leu | Arg | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Tyr | Ala | Asp | Thr | Lys | Leu | Ala | Asn | Val | Leu | Phe | Ala | Arg | Glu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Ala | Asn | Gln | Leu | Glu | Ala | Thr | Gly | Val | Thr | Cys | Tyr | Ala | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| His | Pro | Gly | Pro | Val | Asn | Ser | Glu | Leu | Phe | Leu | Arg | His | Val | Pro | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gly | Trp | Leu | Arg | Pro | Leu | Leu | Arg | Pro | Leu | Ala | Trp | Leu | Val | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Arg | Ala | Pro | Arg | Gly | Gly | Ala | Gln | Thr | Pro | Leu | Tyr | Cys | Ala | Leu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gln | Glu | Gly | Ile | Glu | Pro | Leu | Ser | Gly | Arg | Tyr | Phe | Ala | Asn | Cys | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| His | Val | Glu | Glu | Val | Pro | Pro | Ala | Ala | Arg | Asp | Asp | Arg | Ala | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| His | Arg | Leu | Trp | Glu | Ala | Ser | Lys | Arg | Leu | Ala | Gly | Leu | Gly | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Gly | Glu | Asp | Ala | Glu | Pro | Asp | Glu | Asp | Pro | Gln | Ser | Glu | Asp | Ser | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Glu | Ala | Pro | Ser | Ser | Leu | Ser | Thr | Pro | His | Pro | Glu | Glu | Pro | Thr | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Val | Ser | Gln | Pro | Tyr | Pro | Ser | Pro | Gln | Ser | Ser | Pro | Asp | Leu | Ser | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Lys | Met | Thr | His | Arg | Ile | Gln | Ala | Lys | Val | Glu | Pro | Glu | Ile | Gln | |
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Leu Ser

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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 207
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<210> 208
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 208
acgccagtgg cctcaagctg gttg 24

<210> 209
<211> 45
<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 209
ctttctgagc tctgagccac ggttgacat cctcatccac aatgc 45

<210> 210
<211> 3716
<212> DNA
<213> Homo sapiens

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acccccagga ccagctgttc cagggccctg gccctgccag gatgagctgc 150
caagcctcag gccagccacc tcccaccatc cgctggttgc tgaatgggca 200
gccctgagc atggtgcccc cagaccaca ccacctcctg cctgatggga 250
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| Met | Gly | Gly | Met | Ala | Gln | Asp | Ser | Pro | Pro | Gln | Ile | Leu | Val | His |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Gln | Asp | Gln | Leu | Phe | Gln | Gly | Pro | Gly | Pro | Ala | Arg | Met | Ser |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gln | Ala | Ser | Gly | Gln | Pro | Pro | Pro | Thr | Ile | Arg | Trp | Leu | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Gly | Gln | Pro | Leu | Ser | Met | Val | Pro | Pro | Asp | Pro | His | His | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Asp | Gly | Thr | Leu | Leu | Leu | Leu | Gln | Pro | Pro | Ala | Arg | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ala | His | Asp | Gly | Gln | Ala | Leu | Ser | Thr | Asp | Leu | Gly | Val | Tyr |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Cys | Glu | Ala | Ser | Asn | Arg | Leu | Gly | Thr | Ala | Val | Ser | Arg | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Leu | Ser | Val | Ala | Val | Leu | Arg | Glu | Asp | Phe | Gln | Ile | Gln |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Arg | Asp | Met | Val | Ala | Val | Val | Gly | Glu | Gln | Phe | Thr | Leu | Glu |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gly | Pro | Pro | Trp | Gly | His | Pro | Glu | Pro | Thr | Val | Ser | Trp | Trp |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asp | Gly | Lys | Pro | Leu | Ala | Leu | Gln | Pro | Gly | Arg | His | Thr | Val |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Gly | Ser | Leu | Leu | Met | Ala | Arg | Ala | Glu | Lys | Ser | Asp | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Thr | Tyr | Met | Cys | Val | Ala | Thr | Asn | Ser | Ala | Gly | His | Arg | Glu |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Ala | Ala | Arg | Val | Ser | Ile | Gln | Glu | Pro | Gln | Asp | Tyr | Thr |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Pro | Val | Glu | Leu | Leu | Ala | Val | Arg | Ile | Gln | Leu | Glu | Asn | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Leu | Leu | Asn | Pro | Asp | Pro | Ala | Glu | Gly | Pro | Lys | Pro | Arg | Pro |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| Ala | Val | Trp | Leu | Ser 245 | Trp | Lys | Val | Ser | Gly 250 | Pro | Ala | Ala | Pro | Ala 255 |
| Gln | Ser | Tyr | Thr | Ala 260 | Leu | Phe | Arg | Thr | Gln 265 | Thr | Ala | Pro | Gly | Gly 270 |
| Gln | Gly | Ala | Pro | Trp 275 | Ala | Glu | Glu | Leu | Leu 280 | Ala | Gly | Trp | Gln | Ser 285 |
| Ala | Glu | Leu | Gly | Gly 290 | Leu | His | Trp | Gly | Gln 295 | Asp | Tyr | Glu | Phe | Lys 300 |
| Val | Arg | Pro | Ser | Ser 305 | Gly | Arg | Ala | Arg | Gly 310 | Pro | Asp | Ser | Asn | Val 315 |
| Leu | Leu | Leu | Arg | Leu 320 | Pro | Glu | Lys | Val | Pro 325 | Ser | Ala | Pro | Pro | Gln 330 |
| Glu | Val | Thr | Leu | Lys 335 | Pro | Gly | Asn | Gly | Thr 340 | Val | Phe | Val | Ser | Trp 345 |
| Val | Pro | Pro | Pro | Ala 350 | Glu | Asn | His | Asn | Gly 355 | Ile | Ile | Arg | Gly | Tyr 360 |
| Gln | Val | Trp | Ser | Leu 365 | Gly | Asn | Thr | Ser | Leu 370 | Pro | Pro | Ala | Asn | Trp 375 |
| Thr | Val | Val | Gly | Glu 380 | Gln | Thr | Gln | Leu | Glu 385 | Ile | Ala | Thr | His | Met 390 |
| Pro | Gly | Ser | Tyr | Cys 395 | Val | Gln | Val | Ala | Ala 400 | Val | Thr | Gly | Ala | Gly 405 |
| Ala | Gly | Glu | Pro | Ser 410 | Arg | Pro | Val | Cys | Leu 415 | Leu | Leu | Glu | Gln | Ala 420 |
| Met | Glu | Arg | Ala | Thr 425 | Gln | Glu | Pro | Ser | Glu 430 | His | Gly | Pro | Trp | Thr 435 |
| Leu | Glu | Gln | Leu | Arg 440 | Ala | Thr | Leu | Lys | Arg 445 | Pro | Glu | Val | Ile | Ala 450 |
| Thr | Cys | Gly | Val | Ala 455 | Leu | Trp | Leu | Leu | Leu 460 | Leu | Gly | Thr | Ala | Val 465 |
| Cys | Ile | His | Arg | Arg 470 | Arg | Arg | Ala | Arg | Val 475 | His | Leu | Gly | Pro | Gly 480 |
| Leu | Tyr | Arg | Tyr | Thr 485 | Ser | Glu | Asp | Ala | Ile 490 | Leu | Lys | His | Arg | Met 495 |
| Asp | His | Ser | Asp | Ser 500 | Gln | Trp | Leu | Ala | Asp 505 | Thr | Trp | Arg | Ser | Thr 510 |
| Ser | Gly | Ser | Arg | Asp 515 | Leu | Ser | Ser | Ser | Ser 520 | Ser | Leu | Ser | Ser | Arg 525 |
| Leu | Gly | Ala | Asp | Ala | Arg | Asp | Pro | Leu | Asp | Cys | Arg | Arg | Ser | Leu |

| | 530 | | 535 | | 540 |
|-----------------|---------------------|---------------------|-----|--|-----|
| Leu Ser Trp Asp | Ser Arg Ser Pro Gly | Val Pro Leu Leu Pro | Asp | | |
| | 545 | | 550 | | 555 |
| Thr Ser Thr Phe | Tyr Gly Ser Leu Ile | Ala Glu Leu Pro Ser | Ser | | |
| | 560 | | 565 | | 570 |
| Thr Pro Ala Arg | Pro Ser Pro Gln Val | Pro Ala Val Arg Arg | Leu | | |
| | 575 | | 580 | | 585 |
| Pro Pro Gln Leu | Ala Gln Leu Ser Ser | Pro Cys Ser Ser Ser | Asp | | |
| | 590 | | 595 | | 600 |
| Ser Leu Cys Ser | Arg Arg Gly Leu Ser | Ser Pro Arg Leu Ser | Leu | | |
| | 605 | | 610 | | 615 |
| Ala Pro Ala Glu | Ala Trp Lys Ala Lys | Lys Lys Gln Glu Leu | Gln | | |
| | 620 | | 625 | | 630 |
| His Ala Asn Ser | Ser Pro Leu Leu Arg | Gly Ser His Ser Leu | Glu | | |
| | 635 | | 640 | | 645 |
| Leu Arg Ala Cys | Glu Leu Gly Asn Arg | Gly Ser Lys Asn Leu | Ser | | |
| | 650 | | 655 | | 660 |
| Gln Ser Pro Gly | Ala Val Pro Gln Ala | Leu Val Ala Trp Arg | Ala | | |
| | 665 | | 670 | | 675 |
| Leu Gly Pro Lys | Leu Leu Ser Ser Ser | Asn Glu Leu Val Thr | Arg | | |
| | 680 | | 685 | | 690 |
| His Leu Pro Pro | Ala Pro Leu Phe Pro | His Glu Thr Pro Pro | Thr | | |
| | 695 | | 700 | | 705 |
| Gln Ser Gln Gln | Thr Gln Pro Pro Val | Ala Pro Gln Ala Pro | Ser | | |
| | 710 | | 715 | | 720 |
| Ser Ile Leu Leu | Pro Ala Ala Pro Ile | Pro Ile Leu Ser Pro | Cys | | |
| | 725 | | 730 | | 735 |
| Ser Pro Pro Ser | Pro Gln Ala Ser Ser | Leu Ser Gly Pro Ser | Pro | | |
| | 740 | | 745 | | 750 |
| Ala Ser Ser Arg | Leu Ser Ser Ser Ser | Leu Ser Ser Leu Gly | Glu | | |
| | 755 | | 760 | | 765 |
| Asp Gln Asp Ser | Val Leu Thr Pro Glu | Glu Val Ala Leu Cys | Leu | | |
| | 770 | | 775 | | 780 |
| Glu Leu Ser Glu | Gly Glu Glu Thr Pro | Arg Asn Ser Val Ser | Pro | | |
| | 785 | | 790 | | 795 |
| Met Pro Arg Ala | Pro Ser Pro Pro Thr | Thr Tyr Gly Tyr Ile | Ser | | |
| | 800 | | 805 | | 810 |
| Val Pro Thr Ala | Ser Glu Phe Thr Asp | Met Gly Arg Thr Gly | Gly | | |
| | 815 | | 820 | | 825 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Val | Gly | Pro | Lys | Gly | Gly | Val | Leu | Leu | Cys | Pro | Pro | Arg | Pro | |
| | | | | 830 | | | | | 835 | | | | | 840 | |
| Cys | Leu | Thr | Pro | Thr | Pro | Ser | Glu | Gly | Ser | Leu | Ala | Asn | Gly | Trp | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| Gly | Ser | Ala | Ser | Glu | Asp | Asn | Ala | Ala | Ser | Ala | Arg | Ala | Ser | Leu | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Val | Ser | Ser | Ser | Asp | Gly | Ser | Phe | Leu | Ala | Asp | Ala | His | Phe | Ala | |
| | | | | 875 | | | | | 880 | | | | | 885 | |
| Arg | Ala | Leu | Ala | Val | Ala | Val | Asp | Ser | Phe | Gly | Phe | Gly | Leu | Glu | |
| | | | | 890 | | | | | 895 | | | | | 900 | |
| Pro | Arg | Glu | Ala | Asp | Cys | Val | Phe | Ile | Asp | Ala | Ser | Ser | Pro | Pro | |
| | | | | 905 | | | | | 910 | | | | | 915 | |
| Ser | Pro | Arg | Asp | Glu | Ile | Phe | Leu | Thr | Pro | Asn | Leu | Ser | Leu | Pro | |
| | | | | 920 | | | | | 925 | | | | | 930 | |
| Leu | Trp | Glu | Trp | Arg | Pro | Asp | Trp | Leu | Glu | Asp | Met | Glu | Val | Ser | |
| | | | | 935 | | | | | 940 | | | | | 945 | |
| His | Thr | Gln | Arg | Leu | Gly | Arg | Gly | Met | Pro | Pro | Trp | Pro | Pro | Asp | |
| | | | | 950 | | | | | 955 | | | | | 960 | |
| Ser | Gln | Ile | Ser | Ser | Gln | Arg | Ser | Gln | Leu | His | Cys | Arg | Met | Pro | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
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<400> 216

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| Met | Arg | Leu | Leu | Val | Leu | Leu | Trp | Gly | Cys | Leu | Leu | Leu | Pro | Gly | |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | |
| Tyr | Glu | Ala | Leu | Glu | Gly | Pro | Glu | Glu | Ile | Ser | Gly | Phe | Glu | Gly | |
| | | | | 20 | | | | 25 | | | | | | 30 | |
| Asp | Thr | Val | Ser | Leu | Gln | Cys | Thr | Tyr | Arg | Glu | Glu | Leu | Arg | Asp | |
| | | | | 35 | | | | 40 | | | | | | 45 | |
| His | Arg | Lys | Tyr | Trp | Cys | Arg | Lys | Gly | Gly | Ile | Leu | Phe | Ser | Arg | |
| | | | | 50 | | | | 55 | | | | | | 60 | |
| Cys | Ser | Gly | Thr | Ile | Tyr | Ala | Glu | Glu | Glu | Gly | Gln | Glu | Thr | Met | |
| | | | | 65 | | | | 70 | | | | | | 75 | |
| Lys | Gly | Arg | Val | Ser | Ile | Arg | Asp | Ser | Arg | Gln | Glu | Leu | Ser | Leu | |
| | | | | 80 | | | | 85 | | | | | | 90 | |
| Ile | Val | Thr | Leu | Trp | Asn | Leu | Thr | Leu | Gln | Asp | Ala | Gly | Glu | Tyr | |
| | | | | 95 | | | | 100 | | | | | | 105 | |
| Trp | Cys | Gly | Val | Glu | Lys | Arg | Gly | Pro | Asp | Glu | Ser | Leu | Leu | Ile | |
| | | | | 110 | | | | 115 | | | | | | 120 | |
| Ser | Leu | Phe | Val | Phe | Pro | Gly | Pro | Cys | Cys | Pro | Pro | Ser | Pro | Ser | |
| | | | | 125 | | | | 130 | | | | | | 135 | |
| Pro | Thr | Phe | Gln | Pro | Leu | Ala | Thr | Thr | Arg | Leu | Gln | Pro | Lys | Ala | |
| | | | | 140 | | | | 145 | | | | | | 150 | |
| Lys | Ala | Gln | Gln | Thr | Gln | Pro | Pro | Gly | Leu | Thr | Ser | Pro | Gly | Leu | |
| | | | | 155 | | | | 160 | | | | | | 165 | |
| Tyr | Pro | Ala | Ala | Thr | Thr | Ala | Lys | Gln | Gly | Lys | Thr | Gly | Ala | Glu | |
| | | | | 170 | | | | 175 | | | | | | 180 | |
| Ala | Pro | Pro | Leu | Pro | Gly | Thr | Ser | Gln | Tyr | Gly | His | Glu | Arg | Thr | |
| | | | | 185 | | | | 190 | | | | | | 195 | |
| Ser | Gln | Tyr | Thr | Gly | Thr | Ser | Pro | His | Pro | Ala | Thr | Ser | Pro | Pro | |

| | 200 | 205 | 210 |
|---|-----|-----|-----|
| Ala Gly Ser Ser Arg Pro Pro Met Gln Leu Asp Ser Thr Ser Ala | 215 | 220 | 225 |
| Glu Asp Thr Ser Pro Ala Leu Ser Ser Gly Ser Ser Lys Pro Arg | 230 | 235 | 240 |
| Val Ser Ile Pro Met Val Arg Ile Leu Ala Pro Val Leu Val Leu | 245 | 250 | 255 |
| Leu Ser Leu Leu Ser Ala Ala Gly Leu Ile Ala Phe Cys Ser His | 260 | 265 | 270 |
| Leu Leu Leu Trp Arg Lys Glu Ala Gln Gln Ala Thr Glu Thr Gln | 275 | 280 | 285 |
| Arg Asn Glu Lys Phe Trp Leu Ser Arg Leu Thr Ala Glu Glu Lys | 290 | 295 | 300 |
| Glu Ala Pro Ser Gln Ala Pro Glu Gly Asp Val Ile Ser Met Pro | 305 | 310 | 315 |
| Pro Leu His Thr Ser Glu Glu Glu Leu Gly Phe Ser Lys Phe Val | 320 | 325 | 330 |

Ser Ala

<210> 217

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 217

ccctgcagtg cacctacagg gaag 24

<210> 218

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 218

ctgtcttccc ctgcttggt gtgg 24

<210> 219

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 219
 ggtgcaggaa ggggtgggatc ctcttctctc gctgctctgg ccacatc 47

<210> 220
 <211> 950
 <212> DNA
 <213> Homo sapiens

<400> 220
 ttgtgactaa aagctggcct agcaggccag ggagtgcagc tgcaggcgtg 50
 ggggtggcag gagccgcaga gccagagcag acagccgaga aacagggtga 100
 cagtgtgaaa gaaccagtgg tctcgctctg ttgccaggc tagagtgtac 150
 tggcgtgatc atagctcact gcagcctcag actcctggac ttgagaaatc 200
 ctctgcctt agcctcctgc atatctggga ctccaggggt gcactcaagc 250
 cctgtttctt ctctttctgt gagtggacca cggaggctgg tgagctgcct 300
 gtcaccccaa agctcagctc tgagccagag tgggtggtggc tccacctctg 350
 ccgccggcat agaagccagg agcagggtctc tcagaaggcg gtggtgcca 400
 gctgggatca tgttgttggc cctggtctgt ctgctcagct gcctgctacc 450
 ctccagttag gccaaagctct acggtcgttg tgaactggcc agagtgtac 500
 atgacttcgg gctggacgga taccggggat acagcctggc tgactgggtc 550
 tgccttgctt atttcacaag cggtttcaac gcagctgctt tggactacga 600
 ggctgatggg agcaccaaca acgggatctt ccagatcaac agccggaggt 650
 ggtgcagcaa cctcaccccg aacgtcccca acgtgtgccg gatgtactgc 700
 tcagatttgt tgaatcctaa tctcaaggat accgttatct gtgccatgaa 750
 gataacccaa gagcctcagg gtctgggtta ctgggaggcc tggaggcatc 800
 actgccaggg aaaagacctc actgaatggg tggatggctg tgacttctag 850
 gatggacgga accatgcaca gcaggctggg aaatgtggtt tggttcctga 900
 cctaggcttg ggaagacaag ccagcgaata aaggatggtt gaacgtgaaa 950

<210> 221
 <211> 146
 <212> PRT
 <213> Homo sapiens

<400> 221
 Met Leu Leu Ala Leu Val Cys Leu Leu Ser Cys Leu Leu Pro Ser
 1 5 10 15
 Ser Glu Ala Lys Leu Tyr Gly Arg Cys Glu Leu Ala Arg Val Leu
 20 25 30

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| His | Asp | Phe | Gly | Leu | Asp | Gly | Tyr | Arg | Gly | Tyr | Ser | Leu | Ala | Asp | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Trp | Val | Cys | Leu | Ala | Tyr | Phe | Thr | Ser | Gly | Phe | Asn | Ala | Ala | Ala | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Leu | Asp | Tyr | Glu | Ala | Asp | Gly | Ser | Thr | Asn | Asn | Gly | Ile | Phe | Gln | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ile | Asn | Ser | Arg | Arg | Trp | Cys | Ser | Asn | Leu | Thr | Pro | Asn | Val | Pro | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Asn | Val | Cys | Arg | Met | Tyr | Cys | Ser | Asp | Leu | Leu | Asn | Pro | Asn | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Lys | Asp | Thr | Val | Ile | Cys | Ala | Met | Lys | Ile | Thr | Gln | Glu | Pro | Gln | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Leu | Gly | Tyr | Trp | Glu | Ala | Trp | Arg | His | His | Cys | Gln | Gly | Lys | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asp | Leu | Thr | Glu | Trp | Val | Asp | Gly | Cys | Asp | Phe | | | | | |
| | | | | 140 | | | | | 145 | | | | | | |

<210> 222
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 222
 gggatcatgt tggtggccct ggtc 24

<210> 223
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 223
 gcaaggcaga ccagtcagc cag 23

<210> 224
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 224
 ctgcctgcta ccctccaagt gaggccaagc tctacggtcg ttgtg 45

<210> 225

<211> 2049
<212> DNA
<213> Homo sapiens

<400> 225

agccgctgcc ccgggccggg cggccgcggc ggcacatga gtccccgctc 50
gtgcctgcgt tcgctgcgcc tcctcgtctt cgcctcttc tcagccgccg 100
cgagcaactg gctgtacctg gccaaagtgt cgtcgggtgg gagcatctca 150
gaggaggaga cgtgcgagaa actcaagggc ctgatccaga ggcaggtgca 200
gatgtgcaag cggaacctgg aagtcattga ctccgtgcgc cgcggtgccc 250
agctggccat tgaggagtgc cagtaccagt tccggaaccg gcgctggaac 300
tgctccacac tcgactcctt gccctcttc ggcaaggtgg tgacgcaagg 350
gactcgggag gcggccttcg tgtacgcat ctcttcggca ggtgtggcct 400
ttgcagtgc gcgggcgtgc agcagtgggg agctggagaa gtgcggctgt 450
gacaggacag tgcatggggc cagcccacag ggcttcaggt ggtcaggatg 500
ctctgacaac atcgctacg gtgtggcctt ctacagtcg ttgtgtgatg 550
tgccgggagag aagcaagggg gcctcgtcca gcagagccct catgaacctc 600
cacaacaatg aggcgggcag gaaggccatc ctgacacaca tgcgggtgga 650
atgcaagtgc cacgggggtgt caggctcctg tgaggtaaag acgtgctggc 700
gagccgtgcc gcccttcgc cagggtgggtc acgcactgaa ggagaagttt 750
gatggtgcca ctgagggtga gccacgccgc gtgggtcct ccagggcact 800
ggtaccacgc aacgcacagt tcaagccga cacagatgag gacctggtgt 850
acttgagacc tagcccgac ttctgtgagc aggacatgcg cagcggcgtg 900
ctgggcacga ggggcgcac atgcaacaag acgtccaagg ccatcgacgg 950
ctgtgagctg ctgtgctgtg gccgcggctt ccacacggcg caggtggagc 1000
tggctgaacg ctgcagctgc aaattccact ggtgctgctt cgtcaagtgc 1050
cggcagtgcc agcggctcgt ggagttgcac acgtgccgat gaccgcctgc 1100
ctagccctgc gccggcaacc acctagtggc ccagggaagg ccgataattt 1150
aaacagtctc ccaccaccta cccaagaga tactggttgt atttttgtt 1200
ctggtttggt ttttgggtcc tcatgttatt tattgccga accaggcagg 1250
caacccaag ggcaccaacc agggcctccc caaagcctgg gcctttgtgg 1300
ctgccactga ccaaagggac cttgctcgtg ccgctggctg cccgcatgtg 1350

gctgccactg accactcagt tgttatctgt gtccgttttt ctacttgcag 1400
acctaaggtg gagtaacaag gagtattacc accacatggc tactgaccgt 1450
gtcatcgggg aagagggggc cttatggcag ggaaaatagg taccgacttg 1500
atggaagtca caccctctgg aaaaaagaac tottaactct ccagcacaca 1550
tacacatgga ctcctggcag cttgagccta gaagccatgt ctctcaaattg 1600
ccctgagaaa gggaacaagc agataccagg tcaagggcac caggttcatt 1650
tcagccctta catggacagc tagaggttcg atatctgttg gtccttccag 1700
gcaagaagag ggagatgaga gcaagagacg actgaagtcc caccctagaa 1750
cccagcctgc cccagcctgc ccctgggaag aggaaactta accactcccc 1800
agaccacact aggcaggcat ataggctgcc atcctggacc agggatcccg 1850
gctgtgcctt tgcagtcatg cccgagtcac ctttcacagc gctgttcctc 1900
catgaaactg aaaaacacac acacacacac acacacacac acacacacac 1950
acacacacac ggacacacac acacacctgc gagagagagg gaggaaaggg 2000
ctgtgccttt gcagtcatgc ccgagtcacc tttcacagca ctgttcctc 2049

<210> 226
<211> 351
<212> PRT
<213> Homo sapiens

<400> 226
Met Ser Pro Arg Ser Cys Leu Arg Ser Leu Arg Leu Leu Val Phe
1 5 10 15
Ala Val Phe Ser Ala Ala Ala Ser Asn Trp Leu Tyr Leu Ala Lys
20 25 30
Leu Ser Ser Val Gly Ser Ile Ser Glu Glu Glu Thr Cys Glu Lys
35 40 45
Leu Lys Gly Leu Ile Gln Arg Gln Val Gln Met Cys Lys Arg Asn
50 55 60
Leu Glu Val Met Asp Ser Val Arg Arg Gly Ala Gln Leu Ala Ile
65 70 75
Glu Glu Cys Gln Tyr Gln Phe Arg Asn Arg Arg Trp Asn Cys Ser
80 85 90
Thr Leu Asp Ser Leu Pro Val Phe Gly Lys Val Val Thr Gln Gly
95 100 105
Thr Arg Glu Ala Ala Phe Val Tyr Ala Ile Ser Ser Ala Gly Val
110 115 120

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Phe | Ala | Val | Thr | Arg | Ala | Cys | Ser | Ser | Gly | Glu | Leu | Glu | Lys | 125 | 130 | 135 |
| Cys | Gly | Cys | Asp | Arg | Thr | Val | His | Gly | Val | Ser | Pro | Gln | Gly | Phe | 140 | 145 | 150 |
| Gln | Trp | Ser | Gly | Cys | Ser | Asp | Asn | Ile | Ala | Tyr | Gly | Val | Ala | Phe | 155 | 160 | 165 |
| Ser | Gln | Ser | Phe | Val | Asp | Val | Arg | Glu | Arg | Ser | Lys | Gly | Ala | Ser | 170 | 175 | 180 |
| Ser | Ser | Arg | Ala | Leu | Met | Asn | Leu | His | Asn | Asn | Glu | Ala | Gly | Arg | 185 | 190 | 195 |
| Lys | Ala | Ile | Leu | Thr | His | Met | Arg | Val | Glu | Cys | Lys | Cys | His | Gly | 200 | 205 | 210 |
| Val | Ser | Gly | Ser | Cys | Glu | Val | Lys | Thr | Cys | Trp | Arg | Ala | Val | Pro | 215 | 220 | 225 |
| Pro | Phe | Arg | Gln | Val | Gly | His | Ala | Leu | Lys | Glu | Lys | Phe | Asp | Gly | 230 | 235 | 240 |
| Ala | Thr | Glu | Val | Glu | Pro | Arg | Arg | Val | Gly | Ser | Ser | Arg | Ala | Leu | 245 | 250 | 255 |
| Val | Pro | Arg | Asn | Ala | Gln | Phe | Lys | Pro | His | Thr | Asp | Glu | Asp | Leu | 260 | 265 | 270 |
| Val | Tyr | Leu | Glu | Pro | Ser | Pro | Asp | Phe | Cys | Glu | Gln | Asp | Met | Arg | 275 | 280 | 285 |
| Ser | Gly | Val | Leu | Gly | Thr | Arg | Gly | Arg | Thr | Cys | Asn | Lys | Thr | Ser | 290 | 295 | 300 |
| Lys | Ala | Ile | Asp | Gly | Cys | Glu | Leu | Leu | Cys | Cys | Gly | Arg | Gly | Phe | 305 | 310 | 315 |
| His | Thr | Ala | Gln | Val | Glu | Leu | Ala | Glu | Arg | Cys | Ser | Cys | Lys | Phe | 320 | 325 | 330 |
| His | Trp | Cys | Cys | Phe | Val | Lys | Cys | Arg | Gln | Cys | Gln | Arg | Leu | Val | 335 | 340 | 345 |
| Glu | Leu | His | Thr | Cys | Arg | | | | | | | | | | 350 | | |

<210> 227

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 227

gctgcagctg caaattccac tgg 23

<210> 228
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 228
tgggtgggaga ctgttttaa at tatcggcc 28

<210> 229
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 229
tgcttcgtca agtgccggca gtgccagcgg ctcgtggagt t 41

<210> 230
<211> 1355
<212> DNA
<213> Homo sapiens

<400> 230
cggacgcgtg ggccggacgc tgggcggacg cgtgggcgga cgcgtgggct 50
gggtgcctgc atcgccatgg acaccaccag gtacagcaag tggggcggca 100
gctccgagga ggtccccgga gggccctggg gacgctgggt gcaactggagc 150
aggagacccc tcttcttggc cctggctgtc ctggtcacca cagtcctttg 200
ggctgtgatt ctgagtatcc tattgtccaa ggcctccacg gagcgcgcg 250
cgctgcttga cggccacgac ctgctgagga caaacgcctc gaagcagacg 300
gcggcgctgg gtgccctgaa ggaggaggtc ggagactgcc acagctgctg 350
ctcggggacg caggcgcagc tgcagaccac gcgcgcggag cttggggagg 400
cgcaggcgaa gctgatggag caggagagcg ccctgcggga actgcgtgag 450
cgcgtgaccc agggcttggc tgaagccggc aggggccgtg aggacgtccg 500
caactgagctg ttccggggcg tggaggccgt gaggctccag aacaactcct 550
gcgagccgtg cccacgtcg tggctgtcct tcgagggctc ctgctacttt 600
ttctctgtgc caaagacgac gtgggcggcg gcgcaggatc actgcgcaga 650
tgccagcgcg cacctggtga tcgttggggg cctggatgag cagggcttcc 700
tcactcgga cagcgtggc cgtgggttact ggctgggcct gagggctgtg 750

cgccatctgg gcaaggttca gggctaccag tgggtggacg gagtctctct 800
cagcttcagc cactggaacc agggagagcc caatgacgct tgggggcgcg 850
agaactgtgt catgatgctg cacacggggc tgtggaacga cgcaccgtgt 900
gacagcgaga aggacggctg gatctgtgag aaaaggcaca actgctgacc 950
ccgcccagtg ccctggagcc gcgcccattg cagcatgtcg taccctgggg 1000
gctgctcacc tccctggctc ctggagctga ttgccaaaga gtttttttct 1050
tcctcatcca ccgctgctga gtctcagaaa cacttggccc aacatagccc 1100
tgtccagccc agtgcctggg ctctggggacc tccatgccga cctcatccta 1150
actccactca cgcagaccca acctaacctc cactagctcc aaaatccctg 1200
ctcctgcgtc cccgtgatat gcctccactt ctctccctaa ccaaggttag 1250
gtgactgagg actggagctg tttggttttc tcgcattttc caccaaactg 1300
gaagctgttt ttgcagcctg aggaagcatc aataaatatt tgagaaatga 1350
aaaaa 1355

<210> 231
<211> 293
<212> PRT
<213> Homo sapiens

<400> 231
Met Asp Thr Thr Arg Tyr Ser Lys Trp Gly Gly Ser Ser Glu Glu
1 5 10 15
Val Pro Gly Gly Pro Trp Gly Arg Trp Val His Trp Ser Arg Arg
20 25 30
Pro Leu Phe Leu Ala Leu Ala Val Leu Val Thr Thr Val Leu Trp
35 40 45
Ala Val Ile Leu Ser Ile Leu Leu Ser Lys Ala Ser Thr Glu Arg
50 55 60
Ala Ala Leu Leu Asp Gly His Asp Leu Leu Arg Thr Asn Ala Ser
65 70 75
Lys Gln Thr Ala Ala Leu Gly Ala Leu Lys Glu Glu Val Gly Asp
80 85 90
Cys His Ser Cys Cys Ser Gly Thr Gln Ala Gln Leu Gln Thr Thr
95 100 105
Arg Ala Glu Leu Gly Glu Ala Gln Ala Lys Leu Met Glu Gln Glu
110 115 120
Ser Ala Leu Arg Glu Leu Arg Glu Arg Val Thr Gln Gly Leu Ala
125 130 135

Glu Ala Gly Arg Gly Arg Glu Asp Val Arg Thr Glu Leu Phe Arg
140 145 150

Ala Leu Glu Ala Val Arg Leu Gln Asn Asn Ser Cys Glu Pro Cys
155 160 165

Pro Thr Ser Trp Leu Ser Phe Glu Gly Ser Cys Tyr Phe Phe Ser
170 175 180

Val Pro Lys Thr Thr Trp Ala Ala Ala Gln Asp His Cys Ala Asp
185 190 195

Ala Ser Ala His Leu Val Ile Val Gly Gly Leu Asp Glu Gln Gly
200 205 210

Phe Leu Thr Arg Asn Thr Arg Gly Arg Gly Tyr Trp Leu Gly Leu
215 220 225

Arg Ala Val Arg His Leu Gly Lys Val Gln Gly Tyr Gln Trp Val
230 235 240

Asp Gly Val Ser Leu Ser Phe Ser His Trp Asn Gln Gly Glu Pro
245 250 255

Asn Asp Ala Trp Gly Arg Glu Asn Cys Val Met Met Leu His Thr
260 265 270

Gly Leu Trp Asn Asp Ala Pro Cys Asp Ser Glu Lys Asp Gly Trp
275 280 285

Ile Cys Glu Lys Arg His Asn Cys
290

<210> 232
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 232
gcgagaactg tgtcatgatg ctgc 24

<210> 233
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 233
gtttctgaga ctcagcagcg gtgg 24

<210> 234
<211> 50
<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 234

caccgtgtga cagcgagaag gacggctgga tctgtgagaa aaggcacaac 50

<210> 235

<211> 1847

<212> DNA

<213> Homo sapiens

<400> 235

gccaggggaa gaggggtgatc cgacccgggg aaggtcgctg ggcagggcga 50
gttgggaaag cggcagcccc cgccgcccc gcagcccctt ctctctcttt 100
ctcccacgtc ctatctgcct ctcgctggag gccaggccgt gcagcatcga 150
agacaggagg aactggagcc tcattggccg gcccgggcg cgggcctcgg 200
gcttaaataag gagctccggg ctctggctgg gacccgaccg ctgccggccg 250
cgctcccgct gctcctgccg ggtgatggaa aaccccagcc cggccgccgc 300
cctgggcaag gccctctgcg ctctcctcct ggccactctc ggcgccgccg 350
gccagcctct tgggggagag tccatctgtt ccgccagagc cccggccaaa 400
tacagcatca ccttcacggg caagtggagc cagacggcct tccccaaagca 450
gtacccccctg ttccgcccc ctgcgcagtg gtcttcgctg ctggggggccg 500
cgcatagctc cgactacagc atgtggagga agaaccagta cgtcagtaac 550
gggctgcgcg actttgcgga gcgcggcgag gcctgggcgc tgatgaagga 600
gatcgaggcg gcgggggagg cgctgcagag cgtgcacgag gtgttttcgg 650
cgcccgcctt cccagcggc accgggcaga cgtcggcgga gctggaggtg 700
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cgactgggtc gtgggcgtgg acagcctgga cctgtgacgac ggggaccgtt 800
ggcgggaaca ggcggcgctg gacctgtacc cctacgacgc cgggacggac 850
agcggcttca ccttctcctc ccccaacttc gccaccatcc cgcaggacac 900
ggtgaccgag ataacgtcct cctctcccag ccacccggcc aactccttct 950
actacccgcg gctgaaggcc ctgcctccca tcgccagggt gacactgctg 1000
cggctgcgac agagccccag ggcccttcac cctcccgccc cagtcctgcc 1050
cagcagggac aatgagattg tagacagcgc ctcaagttcca gaaacgccgc 1100

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 243

cagcccccttc tcctcctttc tcccacgtcc tatctgcctc tc 42

<210> 244

<211> 1894

<212> DNA

<213> Homo sapiens

<400> 244

ggcggcgtcc gtgaggggct cctttgggca ggggtagtgt ttggtgtccc 50
tgtcttgcgt gatattgaca aactgaagct ttctgcacc actggactta 100
aggaagagtg tactcgtagg cggacagctt tagtggccgg ccggccgctc 150
tcatcccccg taaggagcag agtcctttgt actgaccaag atgagcaaca 200
tctacatcca ggagcctccc acgaatggga aggttttatt gaaaactaca 250
gctggagata ttgacataga gttgtggtcc aaagaagctc ctaaagcttg 300
cagaaatttt atccaacttt gtttggaagc ttattatgac aataccattt 350
ttcatagagt tgtgcctggg ttcatagtcc aaggcggaga tcctactggc 400
acagggagtg gtggagagtc tatctatgga gcgccattca aagatgaatt 450
tcattcacgg ttgcgtttta atcggagagg actggttgcc atggcaaattg 500
ctggtttctca tgataatggc agccagtttt tcttcacact gggtcgagca 550
gatgaactta acaataagca taccatcttt ggaaaggcta caggggatac 600
agtatataac atgttgcgac tgtcagaagt agacattgat gatgacgaaa 650
gaccacataa tccacacaaa ataaaaagct gtgaggtttt gttaaatcct 700
tttgatgaca tcattccaag ggaaattaaa aggctgaaaa aagagaaacc 750
agaggaggaa gtaaagaaat tgaaacccaa aggcacaaaa aattttagtt 800
tactttcatt tggagaggaa gctgaggaag aagaggagga agtaaatcga 850
gttagtcaga gcatgaaggg caaaagcaaa agtagtcatg acttgcttaa 900
ggatgatcca catctcagtt ctgttccagt tgtagaaagt gaaaaaggtg 950
atgcaccaga tttagttgat gatggagaag atgaaagtgc agagcatgat 1000
gaatatattg atggtgatga aaagaacctg atgagagaaa gaattgccaa 1050
aaaattaaaa aaggacacaa gtgcgaatgt taaatcagct ggagaaggag 1100

aagtggagaa gaaatcagtc agccgcagtg aagagctcag aaaagaagca 1150
agacaattaa aacgggaact cttagcagca aaacaaaaaa aagtagaaaa 1200
tgcagcaaaa caagcagaaa aaagaagtga agaggaagaa gccctccag 1250
atggtgctgt tgccgaatac agaagagaaa agcaaaagta tgaagctttg 1300
aggaagcaac agtcaaagaa gggaaacttcc cggaagatc agacccttgc 1350
actgctgaac cagtttaaat ctaaactcac tcaagcaatt gctgaaacac 1400
ctgaaaatga cattcctgaa acagaagtag aagatgatga aggatggatg 1450
tcacatgtac ttcagtttga ggataaaagc agaaaagtga aagatgcaag 1500
catgcaagac tcagatacat ttgaaatcta tgatcctcgg aatccagtga 1550
ataaaagaag gagggaagaa agcaaaaagc tgatgagaga gaaaaaagaa 1600
agaagataaa atgagaataa tgataaccag aacttgctgg aaatgtgcct 1650
acaatggcct tgtaacagcc attgttccca acagcatcac ttaggggtgt 1700
gaaaagaagt atttttgaac ctgttgtctg gttttgaaaa acaattatct 1750
tgttttgcaa attgtggaat gatgtaagca aatgcttttg gttactggta 1800
catgtgtttt ttcctagctg accttttata ttgctaaatc tgaaataaaa 1850
taactttcct tccacaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1894

<210> 245

<211> 472

<212> PRT

<213> Homo sapiens

<400> 245

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Asn | Ile | Tyr | Ile | Gln | Glu | Pro | Pro | Thr | Asn | Gly | Lys | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Lys | Thr | Thr | Ala | Gly | Asp | Ile | Asp | Ile | Glu | Leu | Trp | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Lys | Glu | Ala | Pro | Lys | Ala | Cys | Arg | Asn | Phe | Ile | Gln | Leu | Cys | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Ala | Tyr | Tyr | Asp | Asn | Thr | Ile | Phe | His | Arg | Val | Val | Pro | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Phe | Ile | Val | Gln | Gly | Gly | Asp | Pro | Thr | Gly | Thr | Gly | Ser | Gly | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Glu | Ser | Ile | Tyr | Gly | Ala | Pro | Phe | Lys | Asp | Glu | Phe | His | Ser | Arg |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Arg | Phe | Asn | Arg | Arg | Gly | Leu | Val | Ala | Met | Ala | Asn | Ala | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | |
|-------------------------------------|---|-----|-----|-----|
| Ser His Asp Asn Gly | Ser Gln Phe Phe Phe Thr Leu Gly Arg Ala | 110 | 115 | 120 |
| Asp Glu Leu Asn Asn Lys His Thr Ile | Phe Gly Lys Val Thr Gly | 125 | 130 | 135 |
| Asp Thr Val Tyr Asn Met Leu Arg Leu | Ser Glu Val Asp Ile Asp | 140 | 145 | 150 |
| Asp Asp Glu Arg Pro His Asn Pro His | Lys Ile Lys Ser Cys Glu | 155 | 160 | 165 |
| Val Leu Phe Asn Pro Phe Asp Asp Ile | Ile Pro Arg Glu Ile Lys | 170 | 175 | 180 |
| Arg Leu Lys Lys Glu Lys Pro Glu Glu | Glu Val Lys Lys Leu Lys | 185 | 190 | 195 |
| Pro Lys Gly Thr Lys Asn Phe Ser Leu | Leu Ser Phe Gly Glu Glu | 200 | 205 | 210 |
| Ala Glu Glu Glu Glu Glu Glu Val Asn | Arg Val Ser Gln Ser Met | 215 | 220 | 225 |
| Lys Gly Lys Ser Lys Ser Ser His Asp | Leu Leu Lys Asp Asp Pro | 230 | 235 | 240 |
| His Leu Ser Ser Val Pro Val Val Glu | Ser Glu Lys Gly Asp Ala | 245 | 250 | 255 |
| Pro Asp Leu Val Asp Asp Gly Glu Asp | Glu Ser Ala Glu His Asp | 260 | 265 | 270 |
| Glu Tyr Ile Asp Gly Asp Glu Lys Asn | Leu Met Arg Glu Arg Ile | 275 | 280 | 285 |
| Ala Lys Lys Leu Lys Lys Asp Thr Ser | Ala Asn Val Lys Ser Ala | 290 | 295 | 300 |
| Gly Glu Gly Glu Val Glu Lys Lys Ser | Val Ser Arg Ser Glu Glu | 305 | 310 | 315 |
| Leu Arg Lys Glu Ala Arg Gln Leu Lys | Arg Glu Leu Leu Ala Ala | 320 | 325 | 330 |
| Lys Gln Lys Lys Val Glu Asn Ala Ala | Lys Gln Ala Glu Lys Arg | 335 | 340 | 345 |
| Ser Glu Glu Glu Glu Ala Pro Pro Asp | Gly Ala Val Ala Glu Tyr | 350 | 355 | 360 |
| Arg Arg Glu Lys Gln Lys Tyr Glu Ala | Leu Arg Lys Gln Gln Ser | 365 | 370 | 375 |
| Lys Lys Gly Thr Ser Arg Glu Asp Gln | Thr Leu Ala Leu Leu Asn | 380 | 385 | 390 |
| Gln Phe Lys Ser Lys Leu Thr Gln Ala | Ile Ala Glu Thr Pro Glu | | | |

| | | |
|---|-----|-----|
| 395 | 400 | 405 |
| Asn Asp Ile Pro Glu Thr Glu Val Glu Asp Asp Glu Gly Trp Met | | |
| 410 | 415 | 420 |
| Ser His Val Leu Gln Phe Glu Asp Lys Ser Arg Lys Val Lys Asp | | |
| 425 | 430 | 435 |
| Ala Ser Met Gln Asp Ser Asp Thr Phe Glu Ile Tyr Asp Pro Arg | | |
| 440 | 445 | 450 |
| Asn Pro Val Asn Lys Arg Arg Arg Glu Glu Ser Lys Lys Leu Met | | |
| 455 | 460 | 465 |
| Arg Glu Lys Lys Glu Arg Arg | | |
| 470 | | |

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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 247
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<220>
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<210> 248
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 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 248
 cagatggtgc tgttgccg 18

<210> 249
 <211> 29
 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 249
caactggaac aggaactgag atgtggatc 29

<210> 250
<211> 24
<212> DNA
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<223> Synthetic oligonucleotide probe

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ctggttcagc agtgcaaggg tctg 24

<210> 251
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<223> Synthetic oligonucleotide probe

<400> 251
cctctccgat taaaacgc 18

<210> 252
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<212> DNA
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<210> 253
<211> 2456
<212> DNA
<213> Homo sapiens

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catttcgcct tgctgacggc gtcgagccct ggccagacat gtccacaggg 150
ttctccttcg ggtcogggac tctgggctcc accaccgtgg ccgccggcgg 200
gaccagcaca ggccggcgttt tctccttcgg aacgggaacg tctagcaacc 250
cttctgtggg gctcaatddd ggaaatcttg gaagtacttc aactccagca 300
actacatctg ctccctcaag tggttttgga accgggctct ttggatctaa 350
acctgccact gggttcactc taggaggaac aaatacaggt gccttgca 400

ccaagaggcc tcaagtggtc accaaatatg gaaccctgca aggaaaacag 450
atgcatgtgg ggaagacacc catccaagtc tttttaggag tccccttctc 500
cagacctcct ctaggtatcc tcaggtttgc acctccagaa cccccggagc 550
cctggaaagg aatcagagat gctaccacct acccgctgg atggagtctc 600
gctctgtcgc caggctggag tgcagtggca cgatctcggc tctactgcaac 650
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ggggctacag gtgcctgcag gagtctggg gccagctggc ctcgatgtac 750
gtcagcacgc gggaacggta caagtggctg cgcttcagcg aggactgtct 800
gtacctgaac gtgtacgcgc cggcgcgcg gcccggggat cccagctgc 850
cagtgatggc ctggttcccc ggaggcgccct tcatcgtggg cgctgcttct 900
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tttggatgag tctgtaccag tctcaaagac ctgagaagca gaggcaattc 1850

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Glu | Pro | Trp | Lys | Gly | Ile | Arg | Asp | Ala | Thr | Thr | Tyr | Pro | Pro | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Trp | Ser | Leu | Ala | Leu | Ser | Pro | Gly | Trp | Ser | Ala | Val | Ala | Arg | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ser | Arg | Leu | Thr | Ala | Thr | Ser | Ala | Ser | Arg | Val | Gln | Ala | Ser | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Pro | Gln | Pro | Leu | Ser | Val | Trp | Gly | Tyr | Arg | Cys | Leu | Gln | Glu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Trp | Gly | Gln | Leu | Ala | Ser | Met | Tyr | Val | Ser | Thr | Arg | Glu | Arg | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Tyr | Lys | Trp | Leu | Arg | Phe | Ser | Glu | Asp | Cys | Leu | Tyr | Leu | Asn | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Tyr | Ala | Pro | Ala | Arg | Ala | Pro | Gly | Asp | Pro | Gln | Leu | Pro | Val | Met | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | Trp | Phe | Pro | Gly | Gly | Ala | Phe | Ile | Val | Gly | Ala | Ala | Ser | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Tyr | Glu | Gly | Ser | Asp | Leu | Ala | Ala | Arg | Glu | Lys | Val | Val | Leu | Val | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Phe | Leu | Gln | His | Arg | Leu | Gly | Ile | Phe | Gly | Phe | Leu | Ser | Thr | Asp | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Asp | Ser | His | Ala | Arg | Gly | Asn | Trp | Gly | Leu | Leu | Asp | Gln | Met | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ala | Leu | Arg | Trp | Val | Gln | Glu | Asn | Ile | Ala | Ala | Phe | Gly | Gly | Asp | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Pro | Gly | Asn | Val | Thr | Leu | Phe | Gly | Gln | Ser | Ala | Gly | Ala | Met | Ser | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Ile | Ser | Gly | Leu | Met | Met | Ser | Pro | Leu | Ala | Ser | Gly | Leu | Phe | His | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Arg | Ala | Ile | Ser | Gln | Ser | Gly | Thr | Ala | Leu | Phe | Arg | Leu | Phe | Ile | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Thr | Ser | Asn | Pro | Leu | Lys | Val | Ala | Lys | Lys | Val | Ala | His | Leu | Ala | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Gly | Cys | Asn | His | Asn | Ser | Thr | Gln | Ile | Leu | Val | Asn | Cys | Leu | Arg | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Ala | Leu | Ser | Gly | Thr | Lys | Val | Met | Arg | Val | Ser | Asn | Lys | Met | Arg | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Phe | Leu | Gln | Leu | Asn | Phe | Gln | Arg | Asp | Pro | Glu | Glu | Ile | Ile | Trp | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Ser | Met | Ser | Pro | Val | Val | Asp | Gly | Val | Val | Ile | Pro | Asp | Asp | Pro | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 425 | | 430 | | 435 |
| Leu Val Leu Leu | Thr Gln Gly Lys Val | Ser Ser Val Pro Tyr | Leu | | |
| | 440 | 445 | 450 | | |
| Leu Gly Val Asn | Asn Leu Glu Phe Asn | Trp Leu Leu Pro Tyr | Asn | | |
| | 455 | 460 | 465 | | |
| Ile Thr Lys Glu | Gln Val Pro Leu Val | Val Glu Glu Tyr Leu | Asp | | |
| | 470 | 475 | 480 | | |
| Asn Val Asn Glu | His Asp Trp Lys Met | Leu Arg Asn Arg Met | Met | | |
| | 485 | 490 | 495 | | |
| Asp Ile Val Gln | Asp Ala Thr Phe Val | Tyr Ala Thr Leu Gln | Thr | | |
| | 500 | 505 | 510 | | |
| Ala His Tyr His | Arg Glu Thr Pro Met | Met Gly Ile Cys Pro | Ala | | |
| | 515 | 520 | 525 | | |
| Gly His Ala Thr | Thr Arg Met Lys Ser | Thr Cys Ser Trp Ile | Leu | | |
| | 530 | 535 | 540 | | |
| Pro Gln Glu Trp | Ala | | | | |
| | 545 | | | | |

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<210> 257
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<210> 258
<211> 2764
<212> DNA
<213> Homo sapiens

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gggtggagag aggaagctat gtgacatata atttcatgaa cgatgggttc 450
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<211> 544

<212> PRT

<213> Homo sapiens

<400> 259

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Pro | Leu | Leu | Leu | Ser | Ser | Leu | Leu | Gly | Gly | Ser | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Met | Asp | Gly | Arg | Phe | Trp | Ile | Arg | Val | Gln | Glu | Ser | Val | Met |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Pro | Glu | Gly | Leu | Cys | Ile | Ser | Val | Pro | Cys | Ser | Phe | Ser | Tyr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Arg | Gln | Asp | Trp | Thr | Gly | Ser | Thr | Pro | Ala | Tyr | Gly | Tyr | Trp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Phe | Lys | Ala | Val | Thr | Glu | Thr | Thr | Lys | Gly | Ala | Pro | Val | Ala | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asn | His | Gln | Ser | Arg | Glu | Val | Glu | Met | Ser | Thr | Arg | Gly | Arg | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gln | Leu | Thr | Gly | Asp | Pro | Ala | Lys | Gly | Asn | Cys | Ser | Leu | Val | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Arg | Asp | Ala | Gln | Met | Gln | Asp | Glu | Ser | Gln | Tyr | Phe | Phe | Arg | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Glu | Arg | Gly | Ser | Tyr | Val | Thr | Tyr | Asn | Phe | Met | Asn | Asp | Gly | Phe |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Phe | Leu | Lys | Val | Thr | Val | Leu | Ser | Phe | Thr | Pro | Arg | Pro | Gln | Asp |
| | | | | 140 | | | | | 145 | | | | | 150 |
| His | Asn | Thr | Asp | Leu | Thr | Cys | His | Val | Asp | Phe | Ser | Arg | Lys | Gly |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Val | Ser | Ala | Gln | Arg | Thr | Val | Arg | Leu | Arg | Val | Ala | Tyr | Ala | Pro |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Arg | Asp | Leu | Val | Ile | Ser | Ile | Ser | Arg | Asp | Asn | Thr | Pro | Ala | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Glu | Pro | Gln | Pro | Gln | Gly | Asn | Val | Pro | Tyr | Leu | Glu | Ala | Gln | Lys |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gly | Gln | Phe | Leu | Arg | Leu | Leu | Cys | Ala | Ala | Asp | Ser | Gln | Pro | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ala | Thr | Leu | Ser | Trp | Val | Leu | Gln | Asn | Arg | Val | Leu | Ser | Ser | Ser |
| | | | | 230 | | | | | 235 | | | | | 240 |
| His | Pro | Trp | Gly | Pro | Arg | Pro | Leu | Gly | Leu | Glu | Leu | Pro | Gly | Val |
| | | | | 245 | | | | | 250 | | | | | 255 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Lys | Ala | Gly | Asp | Ser | Gly | Arg | Tyr | Thr | Cys | Arg | Ala | Glu | Asn | Arg | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Gly | Ser | Gln | Gln | Arg | Ala | Leu | Asp | Leu | Ser | Val | Gln | Tyr | Pro | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Pro | Glu | Asn | Leu | Arg | Val | Met | Val | Ser | Gln | Ala | Asn | Arg | Thr | Val | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Glu | Asn | Leu | Gly | Asn | Gly | Thr | Ser | Leu | Pro | Val | Leu | Glu | Gly | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Gln | Ser | Leu | Cys | Leu | Val | Cys | Val | Thr | His | Ser | Ser | Pro | Pro | Ala | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Arg | Leu | Ser | Trp | Thr | Gln | Arg | Gly | Gln | Val | Leu | Ser | Pro | Ser | Gln | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Pro | Ser | Asp | Pro | Gly | Val | Leu | Glu | Leu | Pro | Arg | Val | Gln | Val | Glu | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| His | Glu | Gly | Glu | Phe | Thr | Cys | His | Ala | Arg | His | Pro | Leu | Gly | Ser | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Gln | His | Val | Ser | Leu | Ser | Leu | Ser | Val | His | Tyr | Lys | Lys | Gly | Leu | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Ile | Ser | Thr | Ala | Phe | Ser | Asn | Gly | Ala | Phe | Leu | Gly | Ile | Gly | Ile | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Thr | Ala | Leu | Leu | Phe | Leu | Cys | Leu | Ala | Leu | Ile | Ile | Met | Lys | Ile | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Leu | Pro | Lys | Arg | Arg | Thr | Gln | Thr | Glu | Thr | Pro | Arg | Pro | Arg | Phe | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Ser | Arg | His | Ser | Thr | Ile | Leu | Asp | Tyr | Ile | Asn | Val | Val | Pro | Thr | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Ala | Gly | Pro | Leu | Ala | Gln | Lys | Arg | Asn | Gln | Lys | Ala | Thr | Pro | Asn | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Ser | Pro | Arg | Thr | Pro | Pro | Pro | Pro | Gly | Ala | Pro | Ser | Pro | Glu | Ser | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Lys | Lys | Asn | Gln | Lys | Lys | Gln | Tyr | Gln | Leu | Pro | Ser | Phe | Pro | Glu | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Pro | Lys | Ser | Ser | Thr | Gln | Ala | Pro | Glu | Ser | Gln | Glu | Ser | Gln | Glu | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Glu | Leu | His | Tyr | Ala | Thr | Leu | Asn | Phe | Pro | Gly | Val | Arg | Pro | Arg | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Pro | Glu | Ala | Arg | Met | Pro | Lys | Gly | Thr | Gln | Ala | Asp | Tyr | Ala | Glu | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Val | Lys | Phe | Gln | | | | | | | | | | | | |

<210> 260
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 260
caaagcctgc gcctggctctg tg 22

<210> 261
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 261
ttctggagcc cagagggctg tgag 24

<210> 262
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 262
ggagctgccca ccattcaaa tggagcacga aggagagttc acctg 45

<210> 263
<211> 2857
<212> DNA
<213> Homo sapiens

<400> 263
tgaagagtaa tagttggaat caaaagagtc aacgcaatga actgttattt 50
actgctgcgt tttatgttgg gaattcctct cctatggcct tgtcttggag 100
caacagaaaa ctctcaaaca aagaaagtca agcagccagt gcgatctcat 150
ttgagagtga agcgtggctg ggtgtggaac caatTTTTTg taccagagga 200
aatgaatacg actagtcatc acatcggcca gctaagatct gatttagaca 250
atggaaacaa ttctttccag tacaagcttt tgggagctgg agctggaagt 300
acttttatca ttgatgaaag aacaggtgac atatatgccca tacagaagct 350
tgatagagag gagcgatccc tctacatctt aagagcccag gtaatagaca 400
tcgctactgg aagggctgtg gaacctgagt ctgagtttgt catcaaagtt 450

tcggatatca atgacaatga accaaaattc ctagatgaac cttatgaggc 500
cattgtacca gagatgtctc cagaaggaac attagttatc caggtgacag 550
caagtgatgc tgacgatccc tcaagtggta ataatgctcg tctcctctac 600
agcttacttc aaggccagcc atatttttct gttgaaccaa caacaggagt 650
cataagaata tcttctaaaa tggatagaga actgcaagat gagtattggg 700
taatcattca agccaaggac atgattggtc agccaggagc gttgtctgga 750
acaacaagtg tattaattaa actttcagat gttaatgaca ataagcctat 800
atttaaagaa agtttatacc gcttgactgt ctctgaatct gcacccactg 850
ggacttctat aggaacaatc atggcatatg ataatgacat aggagagaat 900
gcagaaatgg attacagcat tgaagaggat gattcgcaaa catttgacat 950
tattactaat catgaaactc aagaaggaat agttatatta aaaaagaaag 1000
tggattttga gcaccagaac cactacggta ttagagcaaa agttaaaaac 1050
catcatgttc ctgagcagct catgaagtac cacactgagg cttccaccac 1100
tttcattaag atccagggtg aagatgttga tgagcctcct cttttcctcc 1150
ttccatatta tgtatttgaa gtttttgaag aaaccccaca gggatcattt 1200
gtaggcgtgg tgtctgccac agaccagac aataggaaat ctccatcag 1250
gtattctatt actaggagca aagtgttcaa tatcaatgat aatggtacaa 1300
tcaactacaag taactcactg gatcgtgaaa tcagtgcttg gtacaaccta 1350
agtattacag ccacagaaaa atacaatata gaacagatct cttcgatccc 1400
actgtatgtg caagttctta acatcaatga tcatgctcct gagttctctc 1450
aatactatga gacttatgtt tgtgaaaatg caggctctgg tcaggtaatt 1500
cagactatca gtgcagtgga tagagatgaa tccatagaag agcaccattt 1550
ttactttaat ctatctgtag aagacactaa caattcaagt tttaaatca 1600
tagataatca agataacaca gctgtcattt tgactaatag aactggtttt 1650
aaccttcaag aagaacctgt cttctacatc tccatcttaa ttgccgacaa 1700
tggaatcccg tcacttacia gtacaaacac ccttaccatc catgtctgtg 1750
actgtggtga cagtgggagc acacagacct gccagtacca ggagcttgtg 1800
ctttccatgg gattcaagac agaagttatc attgctatc tcatttgcac 1850
tatgatcata tttgggttta tttttttgac tttgggttta aaacaacgga 1900

gaaaacagat tctatttcct gagaaaagtg aagatttcag agagaatata 1950
 ttccaatatg atgatgaagg ggggtggagaa gaagatacag aggcctttga 2000
 tatagcagag ctgaggagta gtaccataat gcggaacgc aagactcgga 2050
 aaaccacaag cgctgagatc aggagcctat acaggcagtc tttgcaagtt 2100
 ggccccgaca gtgccatatt caggaaattc attctggaaa agctcgaaga 2150
 agctaatact gatccgtgtg cccctccttt tgattccctc cagacctacg 2200
 cttttgaggg aacagggtca ttagctggat ccctgagctc cttagaatca 2250
 gcagtctctg atcaggatga aagctatgat taccttaatg agttgggacc 2300
 tcgcttttaa agattagcat gcatgtttgg ttctgcagtg cagtcaaata 2350
 attagggctt tttaccatca aaatttttaa aagtgcta atgtattcga 2400
 acccaatggg agtcttaaag agttttgtgc cctggctcta tggcggggaa 2450
 agccctagtc tatggagttt tctgatttcc ctggagtaaa tactccatgg 2500
 ttatttttaag ctacctacat gctgtcattg aacagagatg tggggagaaa 2550
 tgtaaacaaat cagctcacag gcatcaatac aaccagattt gaagtaaaat 2600
 aatgtaggaa gatattaaaa gtagatgaga ggacacaaga tgtagtcgat 2650
 ccttatgcga ttatatcatt atttacttag gaaagagtaa aaataccaaa 2700
 cgagaaaatt taaaggagca aaaatttgca agtcaaataa aaatgtacaa 2750
 atcgagataa catttacatt tctatcatat tgacatgaaa attgaaaatg 2800
 tatagtcaga gaaattttca tgaattattc catgaagtat tgtttccttt 2850
 atttaaa 2857

<210> 264
 <211> 772
 <212> PRT
 <213> Homo sapiens

<400> 264
 Met Asn Cys Tyr Leu Leu Leu Arg Phe Met Leu Gly Ile Pro Leu
 1 5 10 15
 Leu Trp Pro Cys Leu Gly Ala Thr Glu Asn Ser Gln Thr Lys Lys
 20 25 30
 Val Lys Gln Pro Val Arg Ser His Leu Arg Val Lys Arg Gly Trp
 35 40 45
 Val Trp Asn Gln Phe Phe Val Pro Glu Glu Met Asn Thr Thr Ser
 50 55 60

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 350 | | 355 | | 360 |
| Val Glu Asp Val | Asp Glu Pro Pro Leu | Phe Leu Leu Pro Tyr Tyr | | | |
| | 365 | | 370 | | 375 |
| Val Phe Glu Val | Phe Glu Glu Thr Pro | Gln Gly Ser Phe Val Gly | | | |
| | 380 | | 385 | | 390 |
| Val Val Ser Ala | Thr Asp Pro Asp Asn | Arg Lys Ser Pro Ile Arg | | | |
| | 395 | | 400 | | 405 |
| Tyr Ser Ile Thr | Arg Ser Lys Val Phe | Asn Ile Asn Asp Asn Gly | | | |
| | 410 | | 415 | | 420 |
| Thr Ile Thr Thr | Ser Asn Ser Leu Asp | Arg Glu Ile Ser Ala Trp | | | |
| | 425 | | 430 | | 435 |
| Tyr Asn Leu Ser | Ile Thr Ala Thr Glu | Lys Tyr Asn Ile Glu Gln | | | |
| | 440 | | 445 | | 450 |
| Ile Ser Ser Ile | Pro Leu Tyr Val Gln | Val Leu Asn Ile Asn Asp | | | |
| | 455 | | 460 | | 465 |
| His Ala Pro Glu | Phe Ser Gln Tyr Tyr | Glu Thr Tyr Val Cys Glu | | | |
| | 470 | | 475 | | 480 |
| Asn Ala Gly Ser | Gly Gln Val Ile Gln | Thr Ile Ser Ala Val Asp | | | |
| | 485 | | 490 | | 495 |
| Arg Asp Glu Ser | Ile Glu Glu His His | Phe Tyr Phe Asn Leu Ser | | | |
| | 500 | | 505 | | 510 |
| Val Glu Asp Thr | Asn Asn Ser Ser Phe | Thr Ile Ile Asp Asn Gln | | | |
| | 515 | | 520 | | 525 |
| Asp Asn Thr Ala | Val Ile Leu Thr Asn | Arg Thr Gly Phe Asn Leu | | | |
| | 530 | | 535 | | 540 |
| Gln Glu Glu Pro | Val Phe Tyr Ile Ser | Ile Leu Ile Ala Asp Asn | | | |
| | 545 | | 550 | | 555 |
| Gly Ile Pro Ser | Leu Thr Ser Thr Asn | Thr Leu Thr Ile His Val | | | |
| | 560 | | 565 | | 570 |
| Cys Asp Cys Gly | Asp Ser Gly Ser Thr | Gln Thr Cys Gln Tyr Gln | | | |
| | 575 | | 580 | | 585 |
| Glu Leu Val Leu | Ser Met Gly Phe Lys | Thr Glu Val Ile Ile Ala | | | |
| | 590 | | 595 | | 600 |
| Ile Leu Ile Cys | Ile Met Ile Ile Phe | Gly Phe Ile Phe Leu Thr | | | |
| | 605 | | 610 | | 615 |
| Leu Gly Leu Lys | Gln Arg Arg Lys Gln | Ile Leu Phe Pro Glu Lys | | | |
| | 620 | | 625 | | 630 |
| Ser Glu Asp Phe | Arg Glu Asn Ile Phe | Gln Tyr Asp Asp Glu Gly | | | |
| | 635 | | 640 | | 645 |

Gly Gly Glu Glu Asp Thr Glu Ala Phe Asp Ile Ala Glu Leu Arg
 650 655 660
 Ser Ser Thr Ile Met Arg Glu Arg Lys Thr Arg Lys Thr Thr Ser
 665 670 675
 Ala Glu Ile Arg Ser Leu Tyr Arg Gln Ser Leu Gln Val Gly Pro
 680 685 690
 Asp Ser Ala Ile Phe Arg Lys Phe Ile Leu Glu Lys Leu Glu Glu
 695 700 705
 Ala Asn Thr Asp Pro Cys Ala Pro Pro Phe Asp Ser Leu Gln Thr
 710 715 720
 Tyr Ala Phe Glu Gly Thr Gly Ser Leu Ala Gly Ser Leu Ser Ser
 725 730 735
 Leu Glu Ser Ala Val Ser Asp Gln Asp Glu Ser Tyr Asp Tyr Leu
 740 745 750
 Asn Glu Leu Gly Pro Arg Phe Lys Arg Leu Ala Cys Met Phe Gly
 755 760 765
 Ser Ala Val Gln Ser Asn Asn
 770

<210> 265
 <211> 349
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 24, 60, 141, 226, 228, 249, 252
 <223> unknown base

<400> 265
 atttcaaggc cagccatatt tttntgttga accaacaaca ggagtcataa 50
 gaatatttttn taaaatggat agagaactgc aagatgagta ttgggtaatc 100
 attcaagcca aggacatgat tggtcagcca ggagcgttgt ntggaacaac 150
 aagtgtatta attaaacttt cagatgttaa tgacaataag cctatattta 200
 aagaaagttt ataccgcttg actgtntntg aatctgcacc cactgggant 250
 tntataggaa caatcatggc atatgataat gacataggag agaatgcaga 300
 aatggattac agcattgaag aggatgattc gcaaacattt gacattatt 349

<210> 266
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 266

cttgactgtc tctgaatctg caccc 25

<210> 267

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 267

aagtgggtgga agcctccagt gtgg 24

<210> 268

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 268

ccactacggt attagagcaa aagttaaaaa ccatcatggt tcctggagca 50

gc 52

<210> 269

<211> 2747

<212> DNA

<213> Homo sapiens

<400> 269

gcaacctcag cttctagtat ccagactcca gcgcgcgccc gggcgcgagc 50

cccaaccccg acccagagct tctccagcgg cggcgcgagcg agcagggctc 100

cccgccctaa cttcctccgc ggggcccgagc caccttcggg agtccggggtt 150

gcccacctgc aaactotccg ctttctgcac ctgccacccc tgagccagcg 200

cgggcccccg agcgagtcac ggccaacgcg gggctgcagc tgttgggctt 250

cattctcgcc ttcttgggat ggatcggcgc catcgtcagc actgccctgc 300

cccagtggag gatttactcc tatgccggcg acaacatcgt gaccgcccag 350

gccatgtacg aggggctgtg gatgtcctgc gtgtcgcaga gcaccgggca 400

gatccagtgc aaagtctttg actccttgct gaatctgagc agcacattgc 450

aagcaacccg tgccttgatg gtggttggca tcctcctggg agtgatagca 500

atctttgtgg ccaccgttgg catgaagtgt atgaagtgt tggaagacga 550

tgagggtgcag aagatgagga tggctgtcat tgggggtgcg atatttcttc 600

ttgcaggctc ggctatttta gttgccacag catggtatgg caatagaatc 650
 gttcaagaat tctatgaccc tatgacccca gtcaatgcca ggtacgaatt 700
 tggtcaggct ctcttcaactg gctgggctgc tgcttctctc tgccctcttg 750
 gaggtgccct acttttctgt tcctgtcccc gaaaaacaac ctcttaccca 800
 acaccaaggc cctatccaaa acctgcacct tccagcggga aagactacgt 850
 gtgacacaga ggcaaaagga gaaatcatg ttgaaacaaa ccgaaaatgg 900
 acattgagat actatcatta acattaggac cttagaatct tgggtattgt 950
 aatctgaagt atggtattac aaaacaaaca aacaaacaaa aaacccatgt 1000
 gttaaaatac tcagtgcata acatggctta atcttatttt atcttctttc 1050
 ctcaatatag gaggaagat ttttccattt gtattactgc ttcccattga 1100
 gtaatcatac tcaaatgggg gaaggggtgc tccttaaata tatatagata 1150
 tgtatatata catgtttttc tattaataat agacagtaaa atactattct 1200
 cattatgttg atactagcat acttaaaata tctctaaaat aggtaaatgt 1250
 atttaattcc atattgatga agatgtttat tgggtatatt tctttttcgt 1300
 ccttatatac atatgtaaca gtcaaatatc atttactctt cttcattagc 1350
 tttgggtgcc tttgccacaa gacctagcct aatttaccac ggatgaattc 1400
 tttcaattct tcatgcgtgc ccttttcata tacttatttt attttttacc 1450
 ataactttat agcacttgca tcgttattaa gcccttattt gttttgtgtt 1500
 tcattgggtc ctatctcctg aatctaacac atttcatagc ctacatttta 1550
 gtttctaaag ccaagaagaa tttattacaa atcagaactt tggaggcaaa 1600
 tctttctgca tgaccaaaagt gataaattcc tgttgacctt cccacacaat 1650
 ccctgtactc tgacccatag cactcttggt tgctttgaaa atatttgtcc 1700
 aattgagtag ctgcatgctg ttccccagg tgttgtaaca caactttatt 1750
 gattgaattt ttaagctact tattcatagt tttatatccc cctaaactac 1800
 ctttttgttc cccattcctt aattgtattg ttttccaag tgtaattatc 1850
 atgcgtttta tatcttccta ataagggtgt gtctgtttgt ctgaacaaag 1900
 tgctagactt tctggagtga taatctggtg acaaatattc tctctgtagc 1950
 tgtaagcaag tcaactaatc tttctacctc ttttttctat ctgccaaatt 2000
 gagataatga tacttaacca gttagaagag gtagtgtgaa tattaattag 2050

tttatattac tcttattcct tgaacatgaa ctatgcctat gtagtgtctt 2100
tatttgctca gctggctgag aactgaaga agtcactgaa caaacctac 2150
acacgtacct tcatgtgatt cactgccttc ctctctctac cagtctatct 2200
ccactgaaca aaacctacac acataccttc atgtggttca gtgccttcct 2250
ctctctacca gtctatttcc actgaacaaa acctacgcac ataccttcat 2300
gtggctcagt gccttcctct ctctaccagt ctatttccat tctttcagct 2350
gtgtctgaca tgtttggtgt ctgttcatt ttaacaactg ctcttacttt 2400
tccagtctgt acagaatgct atttcacttg agcaagatga tgtaatggaa 2450
aggggtgttg cactggtgtc tggagacctg gatttgagtc ttggtgctat 2500
caatcacctg ctgtgtttga gcaaggcatt tggctgctgt aagcttattg 2550
cttcactctgt aagcgggtgt ttgtaattcc tgatcttccc acctcacagt 2600
gatgttggtg ggatccagtg agatagaata catgtaagtg tggttttgta 2650
atttaaaaag tgctatacta agggaaagaa ttgaggaatt aactgcatac 2700
gttttggtgt tgcttttcaa atgtttgaaa ataaaaaaaaa tgtaag 2747

<210> 270

<211> 211

<212> PRT

<213> Homo sapiens

<400> 270

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Asn | Ala | Gly | Leu | Gln | Leu | Leu | Gly | Phe | Ile | Leu | Ala | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Trp | Ile | Gly | Ala | Ile | Val | Ser | Thr | Ala | Leu | Pro | Gln | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | Ile | Tyr | Ser | Tyr | Ala | Gly | Asp | Asn | Ile | Val | Thr | Ala | Gln | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Met | Tyr | Glu | Gly | Leu | Trp | Met | Ser | Cys | Val | Ser | Gln | Ser | Thr | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gln | Ile | Gln | Cys | Lys | Val | Phe | Asp | Ser | Leu | Leu | Asn | Leu | Ser | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Leu | Gln | Ala | Thr | Arg | Ala | Leu | Met | Val | Val | Gly | Ile | Leu | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Val | Ile | Ala | Ile | Phe | Val | Ala | Thr | Val | Gly | Met | Lys | Cys | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Lys | Cys | Leu | Glu | Asp | Asp | Glu | Val | Gln | Lys | Met | Arg | Met | Ala | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | |
|-----------------|---------------------|-------------------------|
| Ile Gly Gly Ala | Ile Phe Leu Leu Ala | Gly Leu Ala Ile Leu Val |
| 125 | 130 | 135 |
| Ala Thr Ala Trp | Tyr Gly Asn Arg Ile | Val Gln Glu Phe Tyr Asp |
| 140 | 145 | 150 |
| Pro Met Thr Pro | Val Asn Ala Arg Tyr | Glu Phe Gly Gln Ala Leu |
| 155 | 160 | 165 |
| Phe Thr Gly Trp | Ala Ala Ala Ser Leu | Cys Leu Leu Gly Gly Ala |
| 170 | 175 | 180 |
| Leu Leu Cys Cys | Ser Cys Pro Arg Lys | Thr Thr Ser Tyr Pro Thr |
| 185 | 190 | 195 |
| Pro Arg Pro Tyr | Pro Lys Pro Ala Pro | Ser Ser Gly Lys Asp Tyr |
| 200 | 205 | 210 |

Val

<210> 271
 <211> 564
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 21, 69, 163, 434, 436, 444
 <223> unknown base

<400> 271
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 ggatggatcg gcgccatcnt cacactgccc ttccccagtg gaggatttta 100
 ctccctatgc tggcgacaac atcgtgaccg cccagcccat gtacgagggg 150
 ctgtggatgt ccngcgtgtc gcagagcacc gggcagatcc agtgcaaagt 200
 ctttgactcc ttgctgaatc tgagcagcac attgcaagca acccgtgcct 250
 tgatggtggt tggcatcctc ctgggagtga tagcaatctt tgtggccacc 300
 gttggcatga agtgtatgaa gtgcttgga gacgatgagg tgcagaagat 350
 gaggatggct gtcattgggg gcgcgatatt tcttcttgca ggtctggcta 400
 ttttagttgc cacagcatgg tatggcaata gaancnttca acantttctat 450
 gaccctatga cccagtcaa tgccaggtac gaatttggtc aggctctctt 500
 cactggctgg gctgctgctt ctctctgcct tctgggaggt gccctacttt 550
 gctgttcctg tccc 564

<210> 272
 <211> 498

<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 30, 49, 102, 141, 147, 171, 324-325, 339-341
<223> unknown base

<400> 272
acccttgacc caacgcggcc ccccgaccgn ttcattggcca aacgcgggnc 50
tccagctgtt gggcttcatt ctccccttcc tgggatggac cggcgcccat 100
cntcagcact gccctgcccc agtggaggat ttactcctat nccggnaca 150
acatcgtgac cgcccaggcc ntgtacgagg ggctgtggat gtcttgogtg 200
tcgcagagca ccgggcagat ccagtgcaaa gtctttgact cccttgctga 250
atctgagcag cacattgcaa gcaacccgtg ccttgatggt gggtggcatc 300
ctcctgggag tgatagcaat cttnttggcc accgttgtnn ntgaagtgt 350
tgaagtgtt ggaagacgat gaggtgcaga agatgaggat ggctgtcatt 400
gggggcgca tatttcttct tgcaggtctg gctatttttag ttgccacagc 450
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccga 498

<210> 273
<211> 552
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 25, 57, 67, 94-95, 116, 152, 165, 212, 233, 392-394
<223> unknown base

<400> 273
gggcccgacc attatccaac cgggntcact gttggctcat ctccctcctg 50
gatgaancgc gccatcntca gactccctgc cccatggaga tttnnccat 100
gctggcgaca acatcntgac cccagccat gtacgagggg ctttgaacgt 150
cngcgtgtcg cagancaccg ggcagatcca gtgcaaagtc tttgactcct 200
tgctgaatct gngcagcaca ttgcagcaac cntgcccctg atggtggttg 250
gcatcctcct gggagtgata gcaatctttg tggccaccgt tggcatgaag 300
tgtatgaagt gcttgggaaga cgatgaggtg cagaagatga ggatggctgt 350
cattgggggc gcgatatttc ttcttgacag tctggctatt tnnngttgcc 400
acagcatggt atggcaatag aatcgttcaa gaattctatg accctatgac 450

cccagtcfaat gccaggtacg aatttgggtca ggctctcttc actgggtggg 500
ctgctgcttc tctctgcctt ctgggaggtg ccctactttg ctgttcctgc 550
ga 552

<210> 274
<211> 526
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 25, 50, 60, 123, 127, 370, 395, 397-398, 402-403, 405-407
<223> unknown base

<400> 274
atttccccct cctggatgga tgcncacc gtcacattgc cttccccan 50
tggaggattn actcctatgc tggcgacaac atcgtgaccc cccaggccat 100
ttaccgaggg gctttggatg tcntgcntgt cgcagagcac cgggcagatc 150
ccagtgcfaa gtctttgact ccttgctgaa tctgagcagc acattgcaag 200
caaccctgc cttgatgggg ttggcatcct cctgggagtg atagcaacct 250
ttgtggccac cgttggcatg aagtgtatga agtgcttgga agacgatgag 300
gtgccagaag atgaggatgg ctgtcattgg gggcgcgata tttcttggtg 350
caggtctggc tatttttagtn gccacagcat ggtatggcaa tagantnntt 400
cnnnnttct atgacctat gacccagtc aatgccaggt acgaatttg 450
tcaggctctc ttcactggct gggctgctgc ttctctctgc cttctgggag 500
gtgccctact ttgctgttcc tgtccc 526

<210> 275
<211> 398
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 22, 61, 91, 144, 238-239, 262, 265-266, 271, 274
<223> unknown base

<400> 275
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gcagcacatt ncaagcaacc ccttgccttg aagtggttg ncatcccccc 100
tgggagtga tagcaatctt tgtggccacc gttggcatga agtntatgaa 150
gtgcttgga gacgatgagg tgcagaagat gaggatggct gtcattgggg 200

gcgcgatatt tcttcttgca ggtctggcta ttttagtnnc cacagcatgg 250
 tatggcaata gnatnnttcg nggnttctat gaccctatga cccagtcaa 300
 tgccaggtac gaatttggtc aggctctctt cactggctgg gctgctgctt 350
 ctctctgcct totgggaggt gccctacttt gctgttcttg tccccgaa 398

<210> 276
 <211> 495
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 39, 58, 130, 234, 314, 364, 427, 450, 461, 476
 <223> unknown base

<400> 276
 agcaatgccc tgccccaggt ggaggattaa ttcctatgnt ggggacaaca 50
 ttgtgacngc ccaggccatg tacggggggc tgtggatgtc ctgctgtctg 100
 cagagcaccg ggcagatcca gtgcaaagtn tttgactcct tgctgaattt 150
 gagcagcaca ttgcaagcaa cccgtgcctt gatggtgggtt ggcattcttc 200
 tgggagtgat agcaatcttt gtggccaccg tggnaatgaa gtgtatgaag 250
 tgcttgaag acgatgaggt gcagaagatg aggatggctg tcattggggg 300
 cgcgatattt ctntttgcag gtctggctat tttagttgcc acagcatggt 350
 atggcaatag aatngttcaa gaattttatg accctatgac cccagtcaat 400
 gccaggtacg aatttggtca ggcttnttc actggctggg ctgctgcttn 450
 tttctgcctt ntgggaggtg ccctantttg ctgttctctg gaacc 495

<210> 277
 <211> 200
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 34, 87, 138, 147, 163, 165-166, 172
 <223> unknown base

<400> 277
 tcataggggg gcgcgatatt ttttcttgca ggtntgggta ttttagttgc 50
 cacagcatgg tatggcaata gaatcgttca agaattntat gaccctatga 100
 cccagtcaa tgccaggtac gaatttggtc aggctctntt cactggntgg 150
 gctgctgctt ctntnngcct tntgggaggt gccctacttt gctgttcttg 200

<210> 278
<211> 542
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 26, 43, 55, 77, 198, 361-362, 391-392, 396
<223> unknown base

<400> 278
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ttacncctat gctggcgaac aacatcntga ccgcccaggc catgtacgag 100
gggctgtgga atgtcctgcg tgtcccagag caccgggcag atccagtgc 150
aagtctttga ctccttgctg aatctgagca gcacattgca agcaacctg 200
ccttgatggt ggttggcatc ctctgggag tgatagcaat ctttgtggcc 250
accgttggca tgaagtgtga tgaagtgctt ggaagacgat gaggtgcaga 300
agatgaggat ggctgtcatt gggggcgcgga tatttcttct tgcaggctctg 350
gctatttttag nngccacagc atggtatggc aatcagaccc nntcanaaac 400
tctatgaccc tatgacccca gtcaatgccca ggtacgaatt tggtcaggct 450
ctcttcaactg gctgggctgc tgcttctctc tgcttcttgg gaggtgccct 500
actttgctgt tctgtcccc gaaaaacaac ctcttaccga cg 542

<210> 279
<211> 548
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 90, 115, 147, 228, 387
<223> unknown base

<400> 279
cggggctgca gctgttgggc ttcattctgc ttcctgggat ggaatcggcg 50
ccatcgtcag cactgccttg ccccatggag gatttactcn tatgctggcg 100
acaacatcgt gaccncccag gccatgtacg aggggctgtg gatgtcngcg 150
tgtcgagag caccgggcag atccagtgc aagtctttga ctccttgctg 200
aatctgagca gcacattgca agcaacctg ccttgatggt ggttggcatc 250
ctctgggag tgatagcaat ctttgtggcc accgttggca tgaagtgtat 300
gaagtgcttg gaagacgatg aggtgcagaa gatgaggatg gctgtcattg 350

ggggcgcgat atttcttctt gcaggtctgg ctatttntag ttgccacagc 400
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccccag 450
tcaatgccag gtacgaattt ggtcaggctc tcttcaactgg ctgggctgct 500
gcttctctct gccttctggg aggtgcccta ctttctgtgt cctgcgaa 548

<210> 280
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 280
cgagcgagtc atggccaacg c 21

<210> 281
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 281
gtgtcacacg tagtctttcc cgctgg 26

<210> 282
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 282
ctgcagctgt tgggcttcat tctcgcttc ctgggatgga tcg 43

<210> 283
<211> 2285
<212> DNA
<213> Homo sapiens

<400> 283
gcgtgccgtc agctcgccgg gcaccgcggc ctogccctcg cctccgccc 50
ctgcgcctgc accgcgtaga ccgaccccc cctccagcgc gccacccgg 100
tagaggaccc ccgcccgtgc cccgaccggt cccgccttt ttgtaaaact 150
taaagcgggc gcagcattaa cgcttcccgc cccggtgacc tctcaggggt 200
ctccccgcca aaggtgctcc gccgctaagg aacatggcga aggtggagca 250
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ccgatgttgt caccaccaac ctaaagcttg gcaacccgac agaccgaaat 350
gtgtgtttta aggtgaagac tacagcacca cgtaggtact gtgtgaggcc 400
caacagcgga atcatcgatg caggggcctc aattaatgta tctgtgatgt 450
tacagccttt cgattatgat cccaatgaga aaagtaaaca caagtttatg 500
gttcagtcta tgtttgctcc aactgacact tcagatatgg aagcagtatg 550
gaaggaggca aaaccggaag accttatgga ttcaaaactt agatgtgtgt 600
ttgaattgcc agcagagaat gataaaccac atgatgtaga aataaataaa 650
attatatcca caactgcac aaagacagaa acaccaatag tgtctaagtc 700
totgagttct tctttggatg acaccgaagt taagaagggt atggaagaat 750
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ccccatttca gcattagccc caactgggaa ggaagaaggc cttagcacc 900
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aagattgcct tgtagaggta gcatgcacag gatggtaaat tggattggtg 1000
gatccaccat atcatgggat ttaaatttat cataaccatg tgtaaaaaga 1050
aattaatgta tgatgacac tcacaggtct tgcctttaa ttaccctcc 1100
ctgcacacac atacacagat acacacacac aaatataatg taacgatctt 1150
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aaatgtcatt ttaaacattg gtaggccttg gtacatgatg ctggattacc 1300
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ttattcagag atgtttaatg catatttaac ttatttaatg tatttcatct 1700
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 agagctgccca ggaagtgttt tttctgggtc agtaaataac aactgtcata 1900
 gggagggaaa ttctcagtag tgacagtcaa ctctaggtta ccttttttaa 1950
 tgaagagtag tcagtcttct agattgttct tataccacct ctcaaccatt 2000
 actcacactt ccagcgccca ggtccaagtc tgagcctgac ctccccttgg 2050
 ggacctagcc tggagtcagg acaaatggat cgggctgcag agggttagaa 2100
 gcgagggcac cagcagttgt ggggtggggag caagggaaga gagaaactct 2150
 tcagcgaatc cttctagtag tagttgagag tttgactgtg aattaatttt 2200
 atgccataaa agaccaaccc agttctgttt gactatgtag catcttgaaa 2250
 agaaaaatta taataaagcc ccaaaattaa gaaaa 2285

<210> 284

<211> 243

<212> PRT

<213> Homo sapiens

<400> 284

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Lys | Val | Glu | Gln | Val | Leu | Ser | Leu | Glu | Pro | Gln | His | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Lys | Phe | Arg | Gly | Pro | Phe | Thr | Asp | Val | Val | Thr | Thr | Asn | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Lys | Leu | Gly | Asn | Pro | Thr | Asp | Arg | Asn | Val | Cys | Phe | Lys | Val | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Thr | Ala | Pro | Arg | Arg | Tyr | Cys | Val | Arg | Pro | Asn | Ser | Gly | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ile | Asp | Ala | Gly | Ala | Ser | Ile | Asn | Val | Ser | Val | Met | Leu | Gln | Pro |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Asp | Tyr | Asp | Pro | Asn | Glu | Lys | Ser | Lys | His | Lys | Phe | Met | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gln | Ser | Met | Phe | Ala | Pro | Thr | Asp | Thr | Ser | Asp | Met | Glu | Ala | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Trp | Lys | Glu | Ala | Lys | Pro | Glu | Asp | Leu | Met | Asp | Ser | Lys | Leu | Arg |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Cys | Val | Phe | Glu | Leu | Pro | Ala | Glu | Asn | Asp | Lys | Pro | His | Asp | Val |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Glu | Ile | Asn | Lys | Ile | Ile | Ser | Thr | Thr | Ala | Ser | Lys | Thr | Glu | Thr |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Ile | Val | Ser | Lys | Ser | Leu | Ser | Ser | Ser | Leu | Asp | Asp | Thr | Glu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Lys | Lys | Val | Met | Glu | Glu | Cys | Lys | Arg | Leu | Gln | Gly | Glu | Val | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gln | Arg | Leu | Arg | Glu | Glu | Asn | Lys | Gln | Phe | Lys | Glu | Glu | Asp | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Arg | Met | Arg | Lys | Thr | Val | Gln | Ser | Asn | Ser | Pro | Ile | Ser | Ala | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Ala | Pro | Thr | Gly | Lys | Glu | Glu | Gly | Leu | Ser | Thr | Arg | Leu | Leu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Leu | Val | Val | Leu | Phe | Phe | Ile | Val | Gly | Val | Ile | Ile | Gly | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |

Ile Ala Leu

<210> 285
 <211> 418
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 40, 53, 68, 119, 134, 177-178, 255
 <223> unknown base

<400> 285
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 tcnagcgccc aggtccangt ctgagcctga cttooccttg gggacctagc 100
 ctggagtcag gacaatggnt cgggctgcag aggnnttagaa gcgagggcac 150
 cagcagtttt ggggtggggag caagggnga gagaaactct tcagcgaatc 200
 cttctagtag tagttgagag ttgactgtg aattaatttt atgccataaa 250
 agacnaaccc agttctgttt gactatgtag catcttgaaa agaaaaatta 300
 taataaagcc ccaaaattaa gaattctttt gtcattttgt cacatttgct 350
 ctatgggggg aattattatt ttatcatttt tattattttg ccattggaag 400
 gttaacttta aaatgagc 418

<210> 286
 <211> 543
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 73, 97

<223> unknown base

<400> 286

tattgtaaag gccattttaa accattggta ggccttggt catgatgctg 50
gattacctcc ttaaatgaca ccnttcctcg cctggttggt ctggccnttg 100
gggagctgga gccccagcat gctggggagt gcggtcagct ccacacagta 150
gtccccacgt ggcccactcc oggcccaggc tgctttccgt gtcttcagtt 200
ctgtccaagc catcagctcc ttgggactga tgaacagagt cagaagccca 250
aaggaattgc cactgtggca gcatcagacg tactcgtcat aagtgagagg 300
cgtgtgttga ctgattgacc cagcgctttg gaaataaatg gcagtgcctt 350
gttcacttaa agggaccaag cttaaattgta ttggttcatt tagtgaagtc 400
aaactgttat tcagagatgt ttaatgcata tttaacttat ttaatgtatt 450
tcattctcatg ttttcttatt gtcacaagag tacagttaat gctgcgtgct 500
gctgaactct gttgggtgaa ctggtattgc tgctggaggg ctg 543

<210> 287

<211> 270

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 38, 64, 72, 164, 198, 200, 220, 222, 229, 242

<223> unknown base

<400> 287

ccctggtggt tttgttcttt aattcgttgg tgtaattntt gggaagattg 50
cttgtagagg tagnatgcac cnggctggt aattggattg gtggatccac 100
catatccatg ggatttaaatt ttatcataac catgtgtaaa aagaaattaa 150
tgtatgatga catntcacag gtattgcctt taaattaccc atccctgnan 200
acacatacac agatacacan anacaaatnt aatgtaacga tnttttagaa 250
agttaaaaat gtatagtaac 270

<210> 288

<211> 428

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 35, 116, 129, 197, 278, 294, 297, 349, 351

<223> unknown base

<400> 288
 ggtggcccat tcccggccca ggctgctttc cggtnntcag ttctgtccaa 50
 gccatcagct ccttgggact gatgaacaga gtcagaagcc caaaggaatt 100
 gcactgtggc agcatnagac gtacttgtna taagtgagag gcgtgtgttg 150
 actgattgac ccagcgcttt ggaaataaat ggcagtgctt tgttcantta 200
 aagggaccaa gctaaatttg tatttggttca tgtagtgaag tcaaactggt 250
 atteagagat gtttaatgca tatttaantt atttaatgta tttnatntca 300
 tgttttctta ttgtcacaag agtacagtta atgctgcgtg ctgctgaant 350
 ntgttgggtg aactgggtatt gctgctggag ggctgtgggc tcctctgtct 400
 ttggagagtc tggatcatgtg gaggtggg 428

<210> 289
 <211> 320
 <212> DNA
 <213> Homo sapiens

<400> 289
 tgctttccgt gtcttcagtt ctgtccaagc catcagctcc ttgggacttg 50
 atgaacagag tcagaagccc aaaggaattg cactgtggca gcatcagacg 100
 tactcgatcat aagtgagagg cgtgtgttga ctgattgacc cagcgctttg 150
 gaaataaatg gcagtgccttt gttcacttaa agggaccaag ctaaatttgt 200
 attggttcat gtagtgaagt caaactgtta ttcagagatg tttaatgcat 250
 atttaactta tttaatgtat ttcattctcat gttttcttat tgtcacaaga 300
 gtacagttaa tgctgcgtgc 320

<210> 290
 <211> 609
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 57, 60, 186, 235, 244, 304, 339, 355, 359, 361, 387, 432, 441,
 447, 481, 513, 532, 584, 598
 <223> unknown base

<400> 290
 aaacctttta aagttgaggg gaaaagaatg atcctttatt aatgacaagg 50
 gaaacntgn gtaatgccac aatggcatat tgtaaattgc attttaaaca 100
 ttggtaggcc ttggtacatg atgctggatt acctctctta aaatgacacc 150
 cttcctcgcc tgttggtgct ggcccttggg gagctngagc ccagcatgct 200

ggggagtgcg gtctgctcca cacagtagtc cccangtggc ccantcccgg 250
 cccaggctgc tttccgtgtc ttcagttctg tccaagccat cagctccttg 300
 ggantgatga acagagtcag aagcccaaag gaattgcant gtggcagcat 350
 cagangtant ngtcataagt gagaggcgtg tgttgantga ttgaccacgc 400
 gctttggaaa taaatggcag tgctttgttc anttaaaggg nccaagntaa 450
 atttgatttg gttcatgtag tgaagtcaaa ntgttattca gagatgttta 500
 atgcatattt aanttattta atgtatttca tntcatgttt tcttattgtc 550
 acaagggtac agttaatgct gcgtgctgct gaantctgtt ggggtgaantg 600
 gtattgctg 609

<210> 291
 <211> 493
 <212> DNA
 <213> Homo sapiens

<400> 291
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 cacagtagtc cccacgtggc ccactcccgg cccaggctgc tttccgtgtc 100
 ttcagttctg tccaagccat cagctccttg ggactgatga acagagtcag 150
 aagcccaaag gaattgcact gtggcagcat cagacgtact cgtcataagt 200
 gagaggcgtg tgttgactga ttgaccacgc gctttggaaa taaatggcag 250
 tgctttgttc acttaaaggg accaagctaa atttgatttg gttcatgtag 300
 tgaagtcaaa ctgttattca gagatgttta atgcatattt aacttattta 350
 atgtatttca tctcatgttt tcttattgtc acaagagtac agttaatgct 400
 gcgtgctgct gaactctgtt ggggtgaactg gtattgctgc tggagggctg 450
 tgggctcctc tgtctctgga gagtctggtc atgtggaggt ggg 493

<210> 292
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 292
 gcaccaccgt aggtacttgt gtgaggc 27

<210> 293
 <211> 23
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 293

aaccaccaga gccaaagagcc ggg 23

<210> 294

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 294

cagcggaatc atcgatgcag gggcctcaat taatgtatct gtgatgttac 50

<210> 295

<211> 2530

<212> DNA

<213> Homo sapiens

<400> 295

gcgagctccg ggtgctgtgg cccggccttg gcggggcggc ctccggtca 50

ggctggctga gaggtccca gctgcagcg ccccgccgc ctctcggga 100

gctctgatct cagctgacag tgcctcggg gaccaaaca gcctggcagg 150

gtctcacttt gttgccagg ctggagttca gtgccatgat catggtttac 200

tgcagccttg acctoctggg ttcaagcgat cctgctgagt agctgggact 250

acaggacaaa attagaagat caaaatggaa aatatgctgc tttggttgat 300

atttttcacc cctgggtgga ccctcattga tggatctgaa atggaatggg 350

attttatgtg gcacttgaga aaggtacccc ggattgtcag tgaaaggact 400

ttccatctca ccagccccgc atttgaggca gatgctaaga tgatggtaaa 450

tacagtgtgt ggcatoaat gccagaaaga actcccaact cccagccttt 500

ctgaattgga ggattatctt tcctatgaga ctgtctttga gaatggcacc 550

cgaaccttaa ccagggtgaa agttcaagat ttggttcttg agccgactca 600

aaatatcacc acaaaggag tatctgttag gagaaagaga caggtgtatg 650

gcaccgacag caggttcagc atcttgaca aaagggttctt aaccaatttc 700

cctttcagca cagctgtgaa gctttccacg ggctgtagtgc gcattctcat 750

ttcccctcag catgttctaa ctgctgcca ctgtgttcat gatggaaagg 800

actatgtcaa aggagtaaa aagctaagg tagggttgtt gaagatgagg 850

aataaaagtg gaggcaagaa acgtcgaggt tctaagagga gcaggagaga 900
agctagtggg ggtgaccaa gagagggtac cagagagcat ctgcaggaga 950
gagcgaaggg tgggagaaga agaaaaaat ctggccgggg tcagaggatt 1000
gccgaaggga ggccttcctt tcagtggacc cgggtcaaga ataccacat 1050
tccgaagggc tgggcacgag gaggcattgg ggacgctacc ttggactatg 1100
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ctcaggattt gataacgata gggctgatca gttggtctat cggttttgca 1250
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tggatgtcca cggggttcag aaggactaca acgttgctgt tcgcatcact 1450
ccctaaaaat acgccagat ttgcctctgg attcacggga acgatgcaa 1500
ttgtgcttac ggctaacaga gacctgaaac agggcgggtg atcatctaaa 1550
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accttcaaac aggtattata aataacatgt gactccttaa tggacttatt 1850
ctcagggtcc tactctaaga agaattcaat aggatgctgg ttgtgtatta 1900
aatgtgaaat tgcatagata aaggtagatg gtaaagcaat tagtatcaga 1950
atagagacag aaagttacaa cacagtttgt actactctga gatggatcca 2000
ttcagctcat gccctcaatg tttatattgt gttatctgtt gggctctggga 2050
catttagttt agtttttttg aagaattaca aatcagaaga aaaagcaagc 2100
attataaaca aaactaataa ctgttttact gctttaagaa ataacaatta 2150
caatgtgtat tatttaaaaa tgggagaaat agtttggtct atgaaataaa 2200
cctagtttag aaataggga gctgagacat tttaagatct caagttttta 2250
tttaactaat actcaaaata tggacttttc atgtatgcat agggaagaca 2300

cttcacaaat tatgaatgat catgtgttga aagccacatt attttatgct 2350
 atacattcta tgtatgaggt gctacatttt taggacaaaag aattctgtaa 2400
 tctttttcaa gaaagagtct ttttctcctt gacaaaatcc agcttttgta 2450
 tgaggactat aggggtgaatt ctctgattag taattttaga tatgtccttt 2500
 cctaaaaatg aataaaattt atgaatatga 2530

<210> 296

<211> 413

<212> PRT

<213> Homo sapiens

<400> 296

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Asn | Met | Leu | Leu | Trp | Leu | Ile | Phe | Phe | Thr | Pro | Gly | Trp | 1 | 5 | 10 | 15 |
| Thr | Leu | Ile | Asp | Gly | Ser | Glu | Met | Glu | Trp | Asp | Phe | Met | Trp | His | 20 | 25 | 30 | |
| Leu | Arg | Lys | Val | Pro | Arg | Ile | Val | Ser | Glu | Arg | Thr | Phe | His | Leu | 35 | 40 | 45 | |
| Thr | Ser | Pro | Ala | Phe | Glu | Ala | Asp | Ala | Lys | Met | Met | Val | Asn | Thr | 50 | 55 | 60 | |
| Val | Cys | Gly | Ile | Glu | Cys | Gln | Lys | Glu | Leu | Pro | Thr | Pro | Ser | Leu | 65 | 70 | 75 | |
| Ser | Glu | Leu | Glu | Asp | Tyr | Leu | Ser | Tyr | Glu | Thr | Val | Phe | Glu | Asn | 80 | 85 | 90 | |
| Gly | Thr | Arg | Thr | Leu | Thr | Arg | Val | Lys | Val | Gln | Asp | Leu | Val | Leu | 95 | 100 | 105 | |
| Glu | Pro | Thr | Gln | Asn | Ile | Thr | Thr | Lys | Gly | Val | Ser | Val | Arg | Arg | 110 | 115 | 120 | |
| Lys | Arg | Gln | Val | Tyr | Gly | Thr | Asp | Ser | Arg | Phe | Ser | Ile | Leu | Asp | 125 | 130 | 135 | |
| Lys | Arg | Phe | Leu | Thr | Asn | Phe | Pro | Phe | Ser | Thr | Ala | Val | Lys | Leu | 140 | 145 | 150 | |
| Ser | Thr | Gly | Cys | Ser | Gly | Ile | Leu | Ile | Ser | Pro | Gln | His | Val | Leu | 155 | 160 | 165 | |
| Thr | Ala | Ala | His | Cys | Val | His | Asp | Gly | Lys | Asp | Tyr | Val | Lys | Gly | 170 | 175 | 180 | |
| Ser | Lys | Lys | Leu | Arg | Val | Gly | Leu | Leu | Lys | Met | Arg | Asn | Lys | Ser | 185 | 190 | 195 | |
| Gly | Gly | Lys | Lys | Arg | Arg | Gly | Ser | Lys | Arg | Ser | Arg | Arg | Glu | Ala | 200 | 205 | 210 | |

Ser Gly Gly Asp Gln Arg Glu Gly Thr Arg Glu His Leu Gln Glu
215 220 225

Arg Ala Lys Gly Gly Arg Arg Arg Lys Lys Ser Gly Arg Gly Gln
230 235 240

Arg Ile Ala Glu Gly Arg Pro Ser Phe Gln Trp Thr Arg Val Lys
245 250 255

Asn Thr His Ile Pro Lys Gly Trp Ala Arg Gly Gly Met Gly Asp
260 265 270

Ala Thr Leu Asp Tyr Asp Tyr Ala Leu Leu Glu Leu Lys Arg Ala
275 280 285

His Lys Lys Lys Tyr Met Glu Leu Gly Ile Ser Pro Thr Ile Lys
290 295 300

Lys Met Pro Gly Gly Met Ile His Phe Ser Gly Phe Asp Asn Asp
305 310 315

Arg Ala Asp Gln Leu Val Tyr Arg Phe Cys Ser Val Ser Asp Glu
320 325 330

Ser Asn Asp Leu Leu Tyr Gln Tyr Cys Asp Ala Glu Ser Gly Ser
335 340 345

Thr Gly Ser Gly Val Tyr Leu Arg Leu Lys Asp Pro Asp Lys Lys
350 355 360

Asn Trp Lys Arg Lys Ile Ile Ala Val Tyr Ser Gly His Gln Trp
365 370 375

Val Asp Val His Gly Val Gln Lys Asp Tyr Asn Val Ala Val Arg
380 385 390

Ile Thr Pro Leu Lys Tyr Ala Gln Ile Cys Leu Trp Ile His Gly
395 400 405

Asn Asp Ala Asn Cys Ala Tyr Gly
410

<210> 297

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 297

gcattctgcag gagagagcga aggg 24

<210> 298

<211> 24

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 298
catcgttccc gtgaatccag aggc 24

<210> 299
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 299
gaagggaggc cttcctttca gtggaccgg gtcaagaata cccac 45

<210> 300
<211> 1869
<212> DNA
<213> Homo sapiens

<400> 300
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ccagtactgg atgtgacagc aggcagagga gcacttagca gcttattcag 100
tgtccgattc tgattccggc aaggatccaa gcatggaatg ctgccgtcgg 150
gcaactcctg gcacactgct cctctttctg gctttcctgc tctgagttc 200
caggaccgca cgctccgagg aggaccggga cggcctatgg gatgcctggg 250
gcccattggag tgaatgctca cgcacctgag ggggaggggc ctctactct 300
ctgaggcgct gcctgagcag caagagctgt gaaggaagaa atatccgata 350
cagaacatgc agtaatgtgg actgccacc agaagcaggt gatttccgag 400
ctcagcaatg ctcagctcat aatgatgtca agcaccatgg ccagttttat 450
gaatggcttc ctgtgtctaa tgaccctgac aacctatgtt cactcaagtg 500
ccaagccaaa ggaacaacc tggttggtga actagcacct aaggtcttag 550
atggtacgag ttgctataca gaatctttgg atatgtgcat cagtggttta 600
tgccaaattg ttggctgcga tcaccagctg ggaagcaccg tcaaggaaga 650
taactgtggg gtctgcaacg gagatgggtc cacctgccgg ctggtccgag 700
ggcagtataa atcccagctc tccgcaacca aatcgatga tactgtggtt 750
gcacttccct atggaagtag acatattcgc cttgtcttaa aaggtcctga 800
tcacttatat ctggaaacca aaacctcca ggggactaaa ggtgaaaaca 850
gtctcagctc cacaggaact ttccttggtg acaattctag tgtggacttc 900

cagaaatttc cagacaaaga gatactgaga atggctggac cactcacagc 950
agatttcatt gtcaagattc gtaactcggg ctccgctgac agtacagtcc 1000
agttcatctt ctatcaaccc atcatccacc gatggaggga gacggatttc 1050
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gtgctacgat ctgaggagca accgtgtggt tgctgaccaa tactgtcact 1150
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ctaccatccc ctctctcggg gggaggccac cccatggacc gcgtgctcct 1300
cctcgtgtgg ggggggcatc cagagccggg cagtttcctg tgtggaggag 1350
gacatccagg ggcattgtcac ttcagtggaa gaggggaaat gcatgtacac 1400
ccctaagatg cccatcgcgc agccctgcaa cttttttgac tgcctaaat 1450
ggctggcaca ggagtgggtc cgtgcacag tgacatgtgg ccagggcctc 1500
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ctgtagccca aaaacaaagc cccacataaa agaggaatgc atcgtaacca 1600
ctccctgcta taaacccaaa gagaaacttc cagtogaggc caagttgcca 1650
tggttcaaac aagctcaaga gctagaagaa ggagctgctg tgtcagagga 1700
gccctcgtaa gttgtaaaag cacagactgt tctatatattg aaactgtttt 1750
gtttaaagaa agcagtgtct cactggttgt agctttcatg ggttctgaac 1800
taagtgtaat catctacca aagctttttg gctctcaaat taaagattga 1850
ttagtttcaa aaaaaaaaaa 1869

<210> 301

<211> 525

<212> PRT

<213> Homo sapiens

<400> 301

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Cys | Cys | Arg | Arg | Ala | Thr | Pro | Gly | Thr | Leu | Leu | Leu | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Phe | Leu | Leu | Leu | Ser | Ser | Arg | Thr | Ala | Arg | Ser | Glu | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Arg | Asp | Gly | Leu | Trp | Asp | Ala | Trp | Gly | Pro | Trp | Ser | Glu | Cys |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Thr | Cys | Gly | Gly | Gly | Ala | Ser | Tyr | Ser | Leu | Arg | Arg | Cys |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Ser | Lys | Ser | Cys | Glu | Gly | Arg | Asn | Ile | Arg | Tyr | Arg | Thr | 65 | 70 | 75 |
| Cys | Ser | Asn | Val | Asp | Cys | Pro | Pro | Glu | Ala | Gly | Asp | Phe | Arg | Ala | 80 | 85 | 90 |
| Gln | Gln | Cys | Ser | Ala | His | Asn | Asp | Val | Lys | His | His | Gly | Gln | Phe | 95 | 100 | 105 |
| Tyr | Glu | Trp | Leu | Pro | Val | Ser | Asn | Asp | Pro | Asp | Asn | Pro | Cys | Ser | 110 | 115 | 120 |
| Leu | Lys | Cys | Gln | Ala | Lys | Gly | Thr | Thr | Leu | Val | Val | Glu | Leu | Ala | 125 | 130 | 135 |
| Pro | Lys | Val | Leu | Asp | Gly | Thr | Arg | Cys | Tyr | Thr | Glu | Ser | Leu | Asp | 140 | 145 | 150 |
| Met | Cys | Ile | Ser | Gly | Leu | Cys | Gln | Ile | Val | Gly | Cys | Asp | His | Gln | 155 | 160 | 165 |
| Leu | Gly | Ser | Thr | Val | Lys | Glu | Asp | Asn | Cys | Gly | Val | Cys | Asn | Gly | 170 | 175 | 180 |
| Asp | Gly | Ser | Thr | Cys | Arg | Leu | Val | Arg | Gly | Gln | Tyr | Lys | Ser | Gln | 185 | 190 | 195 |
| Leu | Ser | Ala | Thr | Lys | Ser | Asp | Asp | Thr | Val | Val | Ala | Leu | Pro | Tyr | 200 | 205 | 210 |
| Gly | Ser | Arg | His | Ile | Arg | Leu | Val | Leu | Lys | Gly | Pro | Asp | His | Leu | 215 | 220 | 225 |
| Tyr | Leu | Glu | Thr | Lys | Thr | Leu | Gln | Gly | Thr | Lys | Gly | Glu | Asn | Ser | 230 | 235 | 240 |
| Leu | Ser | Ser | Thr | Gly | Thr | Phe | Leu | Val | Asp | Asn | Ser | Ser | Val | Asp | 245 | 250 | 255 |
| Phe | Gln | Lys | Phe | Pro | Asp | Lys | Glu | Ile | Leu | Arg | Met | Ala | Gly | Pro | 260 | 265 | 270 |
| Leu | Thr | Ala | Asp | Phe | Ile | Val | Lys | Ile | Arg | Asn | Ser | Gly | Ser | Ala | 275 | 280 | 285 |
| Asp | Ser | Thr | Val | Gln | Phe | Ile | Phe | Tyr | Gln | Pro | Ile | Ile | His | Arg | 290 | 295 | 300 |
| Trp | Arg | Glu | Thr | Asp | Phe | Phe | Pro | Cys | Ser | Ala | Thr | Cys | Gly | Gly | 305 | 310 | 315 |
| Gly | Tyr | Gln | Leu | Thr | Ser | Ala | Glu | Cys | Tyr | Asp | Leu | Arg | Ser | Asn | 320 | 325 | 330 |
| Arg | Val | Val | Ala | Asp | Gln | Tyr | Cys | His | Tyr | Tyr | Pro | Glu | Asn | Ile | 335 | 340 | 345 |
| Lys | Pro | Lys | Pro | Lys | Leu | Gln | Glu | Cys | Asn | Leu | Asp | Pro | Cys | Pro | | | |

gctccaggaa gagcctaggc tggatgtctt gatcaataac gcagggatct 500
tccagtcccc ttacatgaag actgaagatg ggtttgagat gcagttcggg 550
gtgaaccatc tggggcactt tctactcacc aatcttctcc ttggactcct 600
caaaagttca gctcccagca ggattgtggt agtttcttcc aaactttata 650
aatacggaga catcaatttt gatgacttga acagtgaaca aagctataat 700
aaaagctttt gttatagccg gagcaaactg gctaacattc tttttaccag 750
ggaactagcc cgccgcttag aaggcacaaa tgtcaccgtc aatgtgttgc 800
atcctgggtat tgtacggaca aatctgggga ggcacataca cattccactg 850
ttggtcaaac cactcttcaa tttggtgtca tgggcttttt tcaaaactcc 900
agtagaaggt gccagactt ccattttattt ggcctcttca cctgaggtag 950
aaggagtgtc aggaagatac tttggggatt gtaaagagga agaactgttg 1000
cccaaagcta tggatgaatc tgttgcaaga aaactctggg atatcagtga 1050
agtgatggtt ggcctgctaa aataggaaca aggagtaaaa gagctgttta 1100
taaaactgca tatcagttat atctgtgatc aggaatggtg tggattgaga 1150
acttgttact tgaagaaaaa gaattttgat attggaatag cctgctaaga 1200
ggtacatgtg ggtattttgg agttactgaa aaattatttt tgggataaga 1250
gaatttcagc aaagatgttt taaatatata tagtaagtat aatgaataat 1300
aagtacaatg aaaaatacaa ttatattgta aaattataac tgggcaagca 1350
tggatgacat attaataattt gtcagaatta agtgactcaa agtgctatcg 1400
agaggttttt caagtatctt tgagtttcat ggccaaagtg ttaactagtt 1450
ttactacaat gtttggtggt tgtgtggaaa ttatctgcct ggtgtgtgca 1500
cacaagtctt acttggaata aatttactgg tac 1533

<210> 303
<211> 336
<212> PRT
<213> Homo sapiens

<400> 303
Met Ala Val Ala Thr Ala Ala Ala Val Leu Ala Ala Leu Gly Gly
1 5 10 15
Ala Leu Trp Leu Ala Ala Arg Arg Phe Val Gly Pro Arg Val Gln
20 25 30
Arg Leu Arg Arg Gly Gly Asp Pro Gly Leu Met His Gly Lys Thr
35 40 45

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| Val | Leu | Ile | Thr | Gly 50 | Ala | Asn | Ser | Gly | Leu 55 | Gly | Arg | Ala | Thr | Ala 60 |
| Ala | Glu | Leu | Leu | Arg 65 | Leu | Gly | Ala | Arg | Val 70 | Ile | Met | Gly | Cys | Arg 75 |
| Asp | Arg | Ala | Arg | Ala 80 | Glu | Glu | Ala | Ala | Gly 85 | Gln | Leu | Arg | Arg | Glu 90 |
| Leu | Arg | Gln | Ala | Ala 95 | Glu | Cys | Gly | Pro | Glu 100 | Pro | Gly | Val | Ser | Gly 105 |
| Val | Gly | Glu | Leu | Ile 110 | Val | Arg | Glu | Leu | Asp 115 | Leu | Ala | Ser | Leu | Arg 120 |
| Ser | Val | Arg | Ala | Phe 125 | Cys | Gln | Glu | Met | Leu 130 | Gln | Glu | Glu | Pro | Arg 135 |
| Leu | Asp | Val | Leu | Ile 140 | Asn | Asn | Ala | Gly | Ile 145 | Phe | Gln | Cys | Pro | Tyr 150 |
| Met | Lys | Thr | Glu | Asp 155 | Gly | Phe | Glu | Met | Gln 160 | Phe | Gly | Val | Asn | His 165 |
| Leu | Gly | His | Phe | Leu 170 | Leu | Thr | Asn | Leu | Leu 175 | Leu | Gly | Leu | Leu | Lys 180 |
| Ser | Ser | Ala | Pro | Ser 185 | Arg | Ile | Val | Val | Val 190 | Ser | Ser | Lys | Leu | Tyr 195 |
| Lys | Tyr | Gly | Asp | Ile 200 | Asn | Phe | Asp | Asp | Leu 205 | Asn | Ser | Glu | Gln | Ser 210 |
| Tyr | Asn | Lys | Ser | Phe 215 | Cys | Tyr | Ser | Arg | Ser 220 | Lys | Leu | Ala | Asn | Ile 225 |
| Leu | Phe | Thr | Arg | Glu 230 | Leu | Ala | Arg | Arg | Leu 235 | Glu | Gly | Thr | Asn | Val 240 |
| Thr | Val | Asn | Val | Leu 245 | His | Pro | Gly | Ile | Val 250 | Arg | Thr | Asn | Leu | Gly 255 |
| Arg | His | Ile | His | Ile 260 | Pro | Leu | Leu | Val | Lys 265 | Pro | Leu | Phe | Asn | Leu 270 |
| Val | Ser | Trp | Ala | Phe 275 | Phe | Lys | Thr | Pro | Val 280 | Glu | Gly | Ala | Gln | Thr 285 |
| Ser | Ile | Tyr | Leu | Ala 290 | Ser | Ser | Pro | Glu | Val 295 | Glu | Gly | Val | Ser | Gly 300 |
| Arg | Tyr | Phe | Gly | Asp 305 | Cys | Lys | Glu | Glu | Glu 310 | Leu | Leu | Pro | Lys | Ala 315 |
| Met | Asp | Glu | Ser | Val 320 | Ala | Arg | Lys | Leu | Trp 325 | Asp | Ile | Ser | Glu | Val 330 |
| Met | Val | Gly | Leu | Leu | Lys | | | | | | | | | |

<210> 304
 <211> 521
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 20, 34, 62, 87, 221, 229
 <223> unknown base

<400> 304
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 gcaagaaaat tntgggatat cagtgaagtg atggttngcc tgctaaaata 100
 ggaacaagga gtaaaagagc tgtttataaa actgcatatc agttatatct 150
 gtgatcagga atgggtgtgga ttgagaactt gttacttgaa gaaaaagaat 200
 tttgatattg gaatagcctg ntaagaggna catgtgggta ttttgagatt 250
 actgaaaaat tatttttggg ataagagaat ttcagcaaag atgtttttaa 300
 tataatatagt aagtataatg aataataagt acaatgaaaa atacaattat 350
 attgtaaaat tataactggg caagcatgga tgacatatta atatttgtca 400
 gaattaagtg actcaaagtg ctatcgagag gtttttcaag tatctttgag 450
 tttcatggcc aaagtgttaa ctagtgttac tacaatgttt ggtgtttgtg 500
 tggaaattat ctgcctggct t 521

<210> 305
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 305
 ccaggaaatg ctccaggaag agcc 24

<210> 306
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 306
 gcccatgaca ccaaattgaa gagtgg 26

<210> 307

<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 307
aacgcaggga tcttccagtg cccttacatg aagactgaag atggg 45

<210> 308
<211> 1523
<212> DNA
<213> Homo sapiens

<400> 308
gagaggacga ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 50
cggagcccag ccctttccta acccaaccca acctagccca gtcccagccg 100
ccagcgcctg tccctgtcac ggaccccagc gttaccatgc atcctgccgt 150
cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 200
gggtttttac tcctgtaaca actgaaataa caagtcttgc tacagagaat 250
atagatgaaa ttttaaacia tgctgatgtt gctttagtaa atttttatgc 300
tgactggtgt cgtttcagtc agatgttgca tccaattttt gaggaagctt 350
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 400
agagttgatt gtgatcagca ctctgacata gccagagat acaggataag 450
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 500
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggcaa 550
caaaaaagtg accccattca agaaattcgg gacttagcag aaatcaccac 600
tcttgatcgc agcaaaaagaa atatcattgg atattttgag caaaaggact 650
cggacaacta tagagttttt gaacgagtag cgaatatttt gcatgatgac 700
tgtgcctttc tttctgcatt tggggatgtt tcaaaaccgg aaagatatag 750
tggcgacaac ataatctaca aaccaccagg gcattctgct ccgatatatg 800
tgtacttggg agctatgaca aattttgatg tgacttacia ttggattcaa 850
gataaatgtg ttcctcttgt ccgagaaata acatttgaaa atggagagga 900
attgacagaa gaaggactgc cttttctcat actctttcac atgaaagaag 950
atacagaaag tttagaaata ttccagaatg aagtagctcg gcaattaata 1000
agtgaaaaag gtacaataaa cttttttacat gccgattgtg acaaatttag 1050

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Phe | Glu | Gln | Lys | Asp | Ser | Asp | Asn | Tyr | Arg | Val | Phe | Glu | Arg | 170 | 175 | 180 |
| Val | Ala | Asn | Ile | Leu | His | Asp | Asp | Cys | Ala | Phe | Leu | Ser | Ala | Phe | 185 | 190 | 195 |
| Gly | Asp | Val | Ser | Lys | Pro | Glu | Arg | Tyr | Ser | Gly | Asp | Asn | Ile | Ile | 200 | 205 | 210 |
| Tyr | Lys | Pro | Pro | Gly | His | Ser | Ala | Pro | Asp | Met | Val | Tyr | Leu | Gly | 215 | 220 | 225 |
| Ala | Met | Thr | Asn | Phe | Asp | Val | Thr | Tyr | Asn | Trp | Ile | Gln | Asp | Lys | 230 | 235 | 240 |
| Cys | Val | Pro | Leu | Val | Arg | Glu | Ile | Thr | Phe | Glu | Asn | Gly | Glu | Glu | 245 | 250 | 255 |
| Leu | Thr | Glu | Glu | Gly | Leu | Pro | Phe | Leu | Ile | Leu | Phe | His | Met | Lys | 260 | 265 | 270 |
| Glu | Asp | Thr | Glu | Ser | Leu | Glu | Ile | Phe | Gln | Asn | Glu | Val | Ala | Arg | 275 | 280 | 285 |
| Gln | Leu | Ile | Ser | Glu | Lys | Gly | Thr | Ile | Asn | Phe | Leu | His | Ala | Asp | 290 | 295 | 300 |
| Cys | Asp | Lys | Phe | Arg | His | Pro | Leu | Leu | His | Ile | Gln | Lys | Thr | Pro | 305 | 310 | 315 |
| Ala | Asp | Cys | Pro | Val | Ile | Ala | Ile | Asp | Ser | Phe | Arg | His | Met | Tyr | 320 | 325 | 330 |
| Val | Phe | Gly | Asp | Phe | Lys | Asp | Val | Leu | Ile | Pro | Gly | Lys | Leu | Lys | 335 | 340 | 345 |
| Gln | Phe | Val | Phe | Asp | Leu | His | Ser | Gly | Lys | Leu | His | Arg | Glu | Phe | 350 | 355 | 360 |
| His | His | Gly | Pro | Asp | Pro | Thr | Asp | Thr | Ala | Pro | Gly | Glu | Gln | Ala | 365 | 370 | 375 |
| Gln | Asp | Val | Ala | Ser | Ser | Pro | Pro | Glu | Ser | Ser | Phe | Gln | Lys | Leu | 380 | 385 | 390 |
| Ala | Pro | Ser | Glu | Tyr | Arg | Tyr | Thr | Leu | Leu | Arg | Asp | Arg | Asp | Glu | 395 | 400 | 405 |

Leu

<210> 310
 <211> 182
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure

<222> 36, 48
<223> unknown base

<400> 310
attaaggaag aatttccaaa tgaaaatcaa gtagnttttg ccagagtnga 50
ttgtgatcag cactctgaca tagcccagag atacaggata agcaaatacc 100
caaccctcaa attgtttcgt aatgggatga tgatgaagag agaatacagg 150
ggtcagcgat cagtgaaagc attggcagat ta 182

<210> 311
<211> 598
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 38, 59, 140, 169, 174, 183, 282-283, 294-295, 319, 396
<223> unknown base

<400> 311
agaggcctct ctggaagttg tcccgggtgt tcgccgngg agcccgggtc 50
gagaggacna ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 100
cggagcccag ccctttccta acccaaccca acctagcccn gtcccagccg 150
ccagcgcctg tccctgtcnc ggancccagc gtnaccatgc atcctgccgt 200
cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 250
gggtttttac tcctgtaaca actgaaataa cnngtcttga tacnnagaat 300
atagatgaaa ttttaaacna tgctgatgtg gcttttagtca atttttatgc 350
tgactgggtg cgtttcagtc agatgtggca tccaattttt gaggangctt 400
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 450
agagttgatt gtgatcagca ctctgacata gccagagat acaggataag 500
caaataccca accctcaa atgtttcgtaa tgggatgatg atgaagagag 550
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggc 598

<210> 312
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 312
tgagaggcct ctctggaagt tg 22

<210> 313
 <211> 19
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 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 313
 gtcagcgatc agtgaaagc 19

 <210> 314
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 314
 ccagaatgaa gtagctcggc 20

 <210> 315
 <211> 20
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 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 315
 ccgactcaaa atgcattgtc 20

 <210> 316
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 316
 catttggcag gaattgtcc 19

 <210> 317
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 317
 ggtgctatag gccaaagg 18

 <210> 318
 <211> 24
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 318

ctgtatctct gggctatgtc agag 24

<210> 319

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 319

ctacatataa tggcacaatgt cagcc 25

<210> 320

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 320

cgtcttccta tccttaccgc acctcagatg ctcccttctg ctccctg 46

<210> 321

<211> 1333

<212> DNA

<213> Homo sapiens

<400> 321

gcccacgcgt ccgatggcgt tcacgttcgc ggccttctgc tacatgctgg 50

cgctgctgct cactgccgcg ctcatcttct tcgccatttg gcacattata 100

gcatttgatg agctgaagac tgattacaag aatcctatag accagtgtaa 150

taccctgaat ccccttgtac tcccagagta cctcatccac gctttcttct 200

gtgtcatgtt tctttgtgca gcagagtggc ttacactggg tctcaatatg 250

cccctcttgg catatcatat ttggaggat atgagtagac cagtgatgag 300

tggcccagga ctctatgacc ctacaacat catgaatgca gatattctag 350

catattgtca gaaggaagga tgggtgcaat tagcttttta tcttctagca 400

tttttttact acctatatgg catgatctat gttttggtga gctcttagaa 450

caacacacag aagaattggt ccagttaagt gcatgcaaaa agccacaaa 500

tgaagggatt ctatccagca agatcctgtc caagagtagc ctgtggaatc 550

tgatcagtta ctttaaaaaa tgactcotta ttttttaa at gtttccacat 600
 ttttgcttgt ggaaagactg ttttcatatg ttatactcag ataaagattt 650
 taaatggtat tacgtataaa ttaatatata atgattacot ctggtgttga 700
 caggtttgaa ctgacacttc ttaaggaaca gccataatcc tctgaatgat 750
 gcattaatta ctgactgtcc tagtacattg gaagcttttg tttataggaa 800
 cttgtagggc tcatttttgt ttcatlgaaa cagtatctaa ttataaatta 850
 gctgtagata tcagggtgctt ctgatgaagt gaaaatgtat atctgactag 900
 tgggaaactt catgggtttc ctcatctgtc atgtcgatga ttatatatgg 950
 atacatttac aaaaataaaa agcgggaatt ttcccttcgc ttgaatatta 1000
 tccctgtata ttgcatgaat gagagatttc ccatatttcc atcagagtaa 1050
 taaatatact tgctttaatt ctttaagcata agtaaacaatg atataaaaaat 1100
 atatgctgaa ttacttgtga agaatgcatt taaagctatt ttaaatgtgt 1150
 ttttatgtgt aagacattac ttattaagaa attggttatt atgcttactg 1200
 ttctaactctg gtggttaaagg tattcttaag aatttgcagg tactacagat 1250
 tttcaaaact gaatgagaga aaattgtata accatcctgc tgttccttta 1300
 gtgcaataca ataaaactct gaaattaaga ctc 1333

<210> 322
 <211> 144
 <212> PRT
 <213> Homo sapiens

<400> 322
 Met Ala Phe Thr Phe Ala Ala Phe Cys Tyr Met Leu Ala Leu Leu
 1 5 10 15
 Leu Thr Ala Ala Leu Ile Phe Phe Ala Ile Trp His Ile Ile Ala
 20 25 30
 Phe Asp Glu Leu Lys Thr Asp Tyr Lys Asn Pro Ile Asp Gln Cys
 35 40 45
 Asn Thr Leu Asn Pro Leu Val Leu Pro Glu Tyr Leu Ile His Ala
 50 55 60
 Phe Phe Cys Val Met Phe Leu Cys Ala Ala Glu Trp Leu Thr Leu
 65 70 75
 Gly Leu Asn Met Pro Leu Leu Ala Tyr His Ile Trp Arg Tyr Met
 80 85 90
 Ser Arg Pro Val Met Ser Gly Pro Gly Leu Tyr Asp Pro Thr Thr
 95 100 105

Ile Met Asn Ala Asp Ile Leu Ala Tyr Cys Gln Lys Glu Gly Trp
110 115 120

Cys Lys Leu Ala Phe Tyr Leu Leu Ala Phe Phe Tyr Tyr Leu Tyr
125 130 135

Gly Met Ile Tyr Val Leu Val Ser Ser
140

<210> 323
<211> 477
<212> DNA
<213> Homo sapiens

<400> 323
attatagcat ttgatgagct gaagactgat tacaagatcc tatagaccag 50
tgtaataccc tgaatcccct tgtactcca gactaccta tccacgcttt 100
cttctgtgtc atgtttcttt gtgcagcaga gtggcttaca ctgggtctca 150
atatgcccct cttggcatat catatttga ggtatatgag tagaccagt 200
atgagtggcc caggactcta tgacctaca accatcatga atgcagatat 250
tctagcatat tgtcagaagg aaggatgggtg caaattagct ttttatcttc 300
tagcattttt ttactacctata tatggcatga tctatgtttt ggtgagctct 350
tagaacaaca cacagaagaa ttggtccagt taagtgcattg caaaaagcca 400
ccaaatgaag ggattctatc cagcaagatc ctgtccaaga gtagcctgtg 450
gaatctgatac agttacttta aaaaatg 477

<210> 324
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 324
tgtaaaacga cggccagtta aatagacctg caattattaa tct 43

<210> 325
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 325
caggaaacag ctatgaccac ctgcacacct gcaaattccat t 41

<210> 326

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 326
gtgcagcaga gtggcttaca 20

<210> 327
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 327
actggaccaa ttcttctgtg 20

<210> 328
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 328
gatattctag catattgtca gaaggaagga tgggtgcaaata tagct 45

<210> 329
<211> 1174
<212> DNA
<213> Homo sapiens

<400> 329
cggacgcgtg ggggaaaccc ttccgagaaa acagcaacaa gctgagctgc 50
tgtgacagag gggaacaaga tggcggcgcc gaaggggagc ctctgggtga 100
ggaccaact ggggctcccg ccgctgctgc tgctgaccat ggccttggcc 150
ggaggttcgg ggaccgcttc ggctgaagca tttgactcgg tcttgggtga 200
tacggcgtct tgccaccggg cctgtcagtt gacctacccc ttgcacacct 250
accctaagga agaggagttg tacgcatgtc agagagggtg caggctgttt 300
tcaatttgtc agtttgtgga tgatggaatt gacttaaata gaactaaatt 350
ggaatgtgaa tctgcatgta cagaagcata ttcccaatct gatgagcaat 400
atgcttgcca tcttggttgc cagaatcagc tgccattcgc tgaactgaga 450
caagaacaac ttatgtccct gatgccaaaa atgcacctac tctttcctct 500

aactctgggtg aggtcattct ggagtgcacat gatggactcc gcacagagct 550
tcataacctc ttcattggact ttttatcttc aagccgatga cggaaaaata 600
gttatattcc agtctaagcc agaaatccag tacgcaccac atttgagca 650
ggagcctaca aatttgagag aatcatctct aagcaaaatg tcctatctgc 700
aaatgagaaa ttcacaagcg cacaggaatt ttcttgaaga tggagaaagt 750
gatggctttt taagatgcct ctctcttaac tctgggtgga ttttaactac 800
aactcttgtc ctctcgggtga tggatttgct ttggatttgt tgtgcaactg 850
ttgctacagc tgtggagcag tatgttcctt ctgagaagct gagtatctat 900
ggtgacttgg agtttatgaa tgaacaaaag ctaaacagat atccagcttc 950
ttctcttggtg gttgttagat ctaaaactga agatcatgaa gaagcagggc 1000
ctctacctac aaaagtgaat cttgctcatt ctgaaattta agcatttttc 1050
ttttaaaaga caagtgtaat agacatctaa aattccactc ctcatagagc 1100
ttttaaaatg gtttcattgg atataggcct taagaaatca ctataaaatg 1150
caaataaagt tactcaaatc tgtg 1174

<210> 330

<211> 323

<212> PRT

<213> Homo sapiens

<400> 330

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Pro | Lys | Gly | Ser | Leu | Trp | Val | Arg | Thr | Gln | Leu | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Pro | Pro | Leu | Leu | Leu | Leu | Thr | Met | Ala | Leu | Ala | Gly | Gly | Ser |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Gly | Thr | Ala | Ser | Ala | Glu | Ala | Phe | Asp | Ser | Val | Leu | Gly | Asp | Thr |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Ala | Ser | Cys | His | Arg | Ala | Cys | Gln | Leu | Thr | Tyr | Pro | Leu | His | Thr |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Tyr | Pro | Lys | Glu | Glu | Glu | Leu | Tyr | Ala | Cys | Gln | Arg | Gly | Cys | Arg |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Leu | Phe | Ser | Ile | Cys | Gln | Phe | Val | Asp | Asp | Gly | Ile | Asp | Leu | Asn |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Arg | Thr | Lys | Leu | Glu | Cys | Glu | Ser | Ala | Cys | Thr | Glu | Ala | Tyr | Ser |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Gln | Ser | Asp | Glu | Gln | Tyr | Ala | Cys | His | Leu | Gly | Cys | Gln | Asn | Gln |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Pro | Phe | Ala | Glu | Leu | Arg | Gln | Glu | Gln | Leu | Met | Ser | Leu | Met | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Pro | Lys | Met | His | Leu | Leu | Phe | Pro | Leu | Thr | Leu | Val | Arg | Ser | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Trp | Ser | Asp | Met | Met | Asp | Ser | Ala | Gln | Ser | Phe | Ile | Thr | Ser | Ser | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Trp | Thr | Phe | Tyr | Leu | Gln | Ala | Asp | Asp | Gly | Lys | Ile | Val | Ile | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gln | Ser | Lys | Pro | Glu | Ile | Gln | Tyr | Ala | Pro | His | Leu | Glu | Gln | Glu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Pro | Thr | Asn | Leu | Arg | Glu | Ser | Ser | Leu | Ser | Lys | Met | Ser | Tyr | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gln | Met | Arg | Asn | Ser | Gln | Ala | His | Arg | Asn | Phe | Leu | Glu | Asp | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Glu | Ser | Asp | Gly | Phe | Leu | Arg | Cys | Leu | Ser | Leu | Asn | Ser | Gly | Trp | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ile | Leu | Thr | Thr | Thr | Leu | Val | Leu | Ser | Val | Met | Val | Leu | Leu | Trp | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ile | Cys | Cys | Ala | Thr | Val | Ala | Thr | Ala | Val | Glu | Gln | Tyr | Val | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ser | Glu | Lys | Leu | Ser | Ile | Tyr | Gly | Asp | Leu | Glu | Phe | Met | Asn | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gln | Lys | Leu | Asn | Arg | Tyr | Pro | Ala | Ser | Ser | Leu | Val | Val | Val | Arg | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Lys | Thr | Glu | Asp | His | Glu | Glu | Ala | Gly | Pro | Leu | Pro | Thr | Lys | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Asn | Leu | Ala | His | Ser | Glu | Ile | | | | | | | | |
| | | | | 320 | | | | | | | | | | | |

<210> 331
 <211> 350
 <212> DNA
 <213> Homo sapiens

<400> 331
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 gcacacctac cctaaggaag aggagttgta cgcattgtcag agaggttgca 100
 ggctgttttc aatttgtcag tttgtggatg atggaattga cttaaactga 150
 actaaattgg aatgtgaatc tgcattgtaca gaagcatatt cccaatctga 200
 tgagcaatat gcttgccatc ttggttgcca gaatcagctg ccattcgctg 250

aactgagaca agaacaactt atgtccctga tgccaaaaat gcacctactc 300
tttcctctaa ctctggtgag gtcattctgg agtgacatga tggactccgc 350

<210> 332
<211> 562
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 47
<223> unknown base

<400> 332
cacactggcc ggatctttta gagtcctttg accttgacca agggtcngga 50
aaacagcaac aagctgagct gctgtgacag agggaacaag atggcggcgc 100
cgaagggagc ctttgggtga ggacccaact ggggctcccg ccgctgctgc 150
tgctgaccat ggccttg gcc ggaggttcgg ggaccgcttc ggctgaagca 200
tttgactcgg tcttgggtga tacggcgtct tgccaccggg cctgtcagtt 250
gacctacccc ttgcacacct accctaagga agaggagttg tacgcatgtc 300
agagaggttg caggctgttt tcaatttgtc agtttgtgga tgatggaatt 350
gacttaaadc gaactaaatt ggaatgtgaa tctgcatgta cagaagcata 400
ttcccaatct gatgagcaat atgcttgcca tottggttgc cagaatcagc 450
tgccattcgc tgaactgaga caagaacaac ttatgtccct gatgccaaaa 500
atgcacctac tctttcctct aactctggtg aggtcattct ggagtgcacat 550
gatggactcc gc 562

<210> 333
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 333
acaagctgag ctgctgtgac ag 22

<210> 334
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 334
tgattctggc aaccaagatg gc 22

<210> 335
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 335
atggccttgg ccggagggtc ggggaccgct tcggctgaag 40

<210> 336
<211> 1885
<212> DNA
<213> Homo sapiens

<400> 336
gcgaggtggc gatcgctgag aggcaggagg gccgaggcgg gcctgggagg 50
cgggccggag gtggggcgcc gctggggccg gcccgcacgg gcttcatctg 100
agggcgacag gcccgcgacc gagcgtgcgg actggcctcc caagcgtggg 150
gcgacaagct gccggagctg caatgggccg cggctgggga ttcttgtttg 200
gcctcctggg cgccgtgttg ctgctcagct cgggccacgg agaggagcag 250
cccccgaga cagcggcaca gaggtgcttc tgccagggtta gtggttactt 300
ggatgattgt acctgtgatg ttgaaacat tgatagattt aataactaca 350
ggcttttccc aagactacaa aaacttcttg aaagtgacta ctttaggtat 400
tacaaggtaa acctgaagag gccgtgtcct ttctggaatg acatcagcca 450
gtgtggaaga agggactgtg ctgtcaaacc atgtcaatct gatgaagttc 500
ctgatggaat taaatctgcg agctacaagt attctgaaga agccaataat 550
ctcattgaag aatgtgaaca agctgaacga cttggagcag tggatgaatc 600
tctgagttag gaaacacaga aggtgttct tcagtggacc aagcatgatg 650
attcttcaga taacttctgt gaagctgatg acattcagtc ccctgaagct 700
gaatatgtag atttgcttct taatcctgag cgctacactg gttacaaggg 750
accagatgct tggaaaatat ggaatgtcat ctacgaagaa aactgtttta 800
agccacagac aattaaaga cttttaaatc ctttggcttc tggtaaggg 850
acaagtgaag agaacacttt ttacagttgg ctagaaggtc tctgtgtaga 900
aaaaagagca ttctacagac ttatatotgg cctacatgca agcattaatg 950

tgcatttgag tgcaagatat cttttacaag agacctgggt agaaaagaaa 1000
 tggggacaca acattacaga atttcaacag cgatttgatg gaattttgac 1050
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 tagaactaag ggctttatcc aaagtgttac cattcttcga gcgcccagat 1150
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 acttctggaa atacttcatg aaatcaagtc atttcctttg cattttgatg 1250
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 gactttcgac tgcatttttag aaatatttca agaattatgg attgtgttgg 1350
 ttgttttaaa tgtcgtctgt ggggaaagct tcagactcag ggtttgggca 1400
 ctgctctgaa gatcttattt totgagaaat tgatagcaaa tatgccagaa 1450
 agtggaccta gttatgaatt ccatctaacc agacaagaaa tagtatcatt 1500
 attcaacgca tttggaagaa tttctacaag tgtgaaagaa ttagaaaact 1550
 tcaggaactt gttacagaat attcattaaa gaaaacaagc tgatatgtgc 1600
 ctgtttctgg acaatggagg cgaaagagtg gaatttcatt caaaggcata 1650
 atagcaatga cagtcttaag ccaaacattt tatataaagt tgcttttgta 1700
 aaggagaatt atattgtttt aagtaaacac atttttataaa attgtgttaa 1750
 gtctatgtat aatactactg tgagtaaaag taatacttta ataatgtggt 1800
 acaaatttta aagtttaata ttgaataaaa ggaggattat caaattataaa 1850
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 1885

<210> 337
 <211> 468
 <212> PRT
 <213> Homo sapiens

<400> 337
 Met Gly Arg Gly Trp Gly Phe Leu Phe Gly Leu Leu Gly Ala Val
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 Trp Leu Leu Ser Ser Gly His Gly Glu Glu Gln Pro Pro Glu Thr
 20 25 30
 Ala Ala Gln Arg Cys Phe Cys Gln Val Ser Gly Tyr Leu Asp Asp
 35 40 45
 Cys Thr Cys Asp Val Glu Thr Ile Asp Arg Phe Asn Asn Tyr Arg
 50 55 60
 Leu Phe Pro Arg Leu Gln Lys Leu Leu Glu Ser Asp Tyr Phe Arg
 65 70 75

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| Tyr | Tyr | Lys | Val | Asn 80 | Leu | Lys | Arg | Pro | Cys 85 | Pro | Phe | Trp | Asn | Asp 90 |
| Ile | Ser | Gln | Cys | Gly 95 | Arg | Arg | Asp | Cys | Ala 100 | Val | Lys | Pro | Cys | Gln 105 |
| Ser | Asp | Glu | Val | Pro 110 | Asp | Gly | Ile | Lys | Ser 115 | Ala | Ser | Tyr | Lys | Tyr 120 |
| Ser | Glu | Glu | Ala | Asn 125 | Asn | Leu | Ile | Glu | Glu 130 | Cys | Glu | Gln | Ala | Glu 135 |
| Arg | Leu | Gly | Ala | Val 140 | Asp | Glu | Ser | Leu | Ser 145 | Glu | Glu | Thr | Gln | Lys 150 |
| Ala | Val | Leu | Gln | Trp 155 | Thr | Lys | His | Asp | Asp 160 | Ser | Ser | Asp | Asn | Phe 165 |
| Cys | Glu | Ala | Asp | Asp 170 | Ile | Gln | Ser | Pro | Glu 175 | Ala | Glu | Tyr | Val | Asp 180 |
| Leu | Leu | Leu | Asn | Pro 185 | Glu | Arg | Tyr | Thr | Gly 190 | Tyr | Lys | Gly | Pro | Asp 195 |
| Ala | Trp | Lys | Ile | Trp 200 | Asn | Val | Ile | Tyr | Glu 205 | Glu | Asn | Cys | Phe | Lys 210 |
| Pro | Gln | Thr | Ile | Lys 215 | Arg | Pro | Leu | Asn | Pro 220 | Leu | Ala | Ser | Gly | Gln 225 |
| Gly | Thr | Ser | Glu | Glu 230 | Asn | Thr | Phe | Tyr | Ser 235 | Trp | Leu | Glu | Gly | Leu 240 |
| Cys | Val | Glu | Lys | Arg 245 | Ala | Phe | Tyr | Arg | Leu 250 | Ile | Ser | Gly | Leu | His 255 |
| Ala | Ser | Ile | Asn | Val 260 | His | Leu | Ser | Ala | Arg 265 | Tyr | Leu | Leu | Gln | Glu 270 |
| Thr | Trp | Leu | Glu | Lys 275 | Lys | Trp | Gly | His | Asn 280 | Ile | Thr | Glu | Phe | Gln 285 |
| Gln | Arg | Phe | Asp | Gly 290 | Ile | Leu | Thr | Glu | Gly 295 | Glu | Gly | Pro | Arg | Arg 300 |
| Leu | Lys | Asn | Leu | Tyr 305 | Phe | Leu | Tyr | Leu | Ile 310 | Glu | Leu | Arg | Ala | Leu 315 |
| Ser | Lys | Val | Leu | Pro 320 | Phe | Phe | Glu | Arg | Pro 325 | Asp | Phe | Gln | Leu | Phe 330 |
| Thr | Gly | Asn | Lys | Ile 335 | Gln | Asp | Glu | Glu | Asn 340 | Lys | Met | Leu | Leu | Leu 345 |
| Glu | Ile | Leu | His | Glu 350 | Ile | Lys | Ser | Phe | Pro 355 | Leu | His | Phe | Asp | Glu 360 |
| Asn | Ser | Phe | Phe | Ala | Gly | Asp | Lys | Lys | Glu | Ala | His | Lys | Leu | Lys |

| | | |
|---|-----|-----|
| 365 | 370 | 375 |
| Glu Asp Phe Arg Leu His Phe Arg Asn Ile Ser Arg Ile Met Asp | | |
| 380 | 385 | 390 |
| Cys Val Gly Cys Phe Lys Cys Arg Leu Trp Gly Lys Leu Gln Thr | | |
| 395 | 400 | 405 |
| Gln Gly Leu Gly Thr Ala Leu Lys Ile Leu Phe Ser Glu Lys Leu | | |
| 410 | 415 | 420 |
| Ile Ala Asn Met Pro Glu Ser Gly Pro Ser Tyr Glu Phe His Leu | | |
| 425 | 430 | 435 |
| Thr Arg Gln Glu Ile Val Ser Leu Phe Asn Ala Phe Gly Arg Ile | | |
| 440 | 445 | 450 |
| Ser Thr Ser Val Lys Glu Leu Glu Asn Phe Arg Asn Leu Leu Gln | | |
| 455 | 460 | 465 |

Asn Ile His

<210> 338
 <211> 507
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 101, 263, 376, 397, 426
 <223> unknown base

<400> 338
 gctggaaata tggatgtcat ctacgagaaa ctgttttaag ccacagacaa 50
 ttaaaagacc tttaaatacct ttggcttctg gtcaaggac aagtgaagag 100
 nacacttttt acagttggct agaaggtctc tgtgtagaaa aaagagcatt 150
 ctacagactt atatctggcc tacatgcaag cattaatgtg catttgagtg 200
 caagatatct tttaacaagag acctgggttag aaaagaaatg gggacacaac 250
 attacagaat ttnaacagcg atttgatgga attttgactg aaggagaagg 300
 tccaagaagg cttaagaact tgtattttct ctacttaata gaactaaggg 350
 ctttatccaa agtgttacca ttcttngagc gccagattt tcaactnttt 400
 actggaaata aaattcagga tgaggnaaac aaaatgttac ttttggaat 450
 acttcatgaa atcaagtcatt ttcctttgca ttttgatgag aattcatttt 500
 tttgctg 507

<210> 339
 <211> 20

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 339
 aagctgccgg agctgcaatg 20

 <210> 340
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 340
 ttgcttctta atcctgagcg c 21

 <210> 341
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 341
 aaaggaggac tttcgactgc 20

 <210> 342
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 342
 agagattcat ccaactgctcc aagtcg 26

 <210> 343
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 343
 tgtccagaaa caggcacata tcagc 25

 <210> 344
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 344
agacagcggc acagaggtgc ttctgccagg ttagtggtta cttggatgat 50

<210> 345
<211> 1486
<212> DNA
<213> Homo sapiens

<400> 345
cggacgcgtg ggcggacgcg tgggcggacg cgtgggttgg gagggggcag 50
gatgggaggg aaagtgaaga aaacagaaaa ggagagggac agaggccaga 100
ggactttctca tactggacag aaaccgatca ggcatggaac tccccttcgt 150
cactcacctg ttcttgcccc tgggtgttct gacaggtctc tgctccccct 200
ttaacctgga tgaacatcac ccacgcctat tcccagggcc accagaagct 250
gaatttgatg acagtgtctt acaacatgtt ggggggtggac agcgatggat 300
gctgggtggc gccccctggg atgggccttc aggcgaccgg aggggggacg 350
tttatcgtcg cctgtaggg ggggcccaca atgccccatg tgccaagggc 400
cacttaggtg actaccaact gggaaattca tctcatcctg ctgtgaatat 450
gcacctgggg atgtctctgt tagagacaga tggatgatgg ggattcatgg 500
tgagctaagg agagggtggg ggcagtgtct ctgaagggtc ataaaagaaa 550
aaagagaagt gtggtgaagg aaaatggtct gtgtggaggg gtcaaggagt 600
taaaaaccct agaaagcaaa aggtaggtaa tgtcaggag tagtcttcat 650
gcctccttca actgggagca tgttctgagg gtgccctccc aagcctggga 700
gtaactatct ccccatccc caggcctgtg cccctctctg gtctcgtgct 750
tgtggcagct ctgtcttcag ttctgggata tgtgcccggt tggatgcttc 800
attccagcct cagggaagcc tggcaccac tgccaacgt gagccagagg 850
aaggctgagt acttggttcc cagaaggaga tactgggtgg gaaaaagatg 900
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 gtgcctctgc actctagcgt ggggtgacaga gtaagcgaga ctccatctca 1300
 aaaataataa taataataat tcagactcct tatcaggagt ccatgatctg 1350
 gcctggcaca gtaactcatg cctgtaatcc caacattttg ggaggccaac 1400
 gcaggaggat tgcttgaggt ctggaggttt gagaccagcc tgggcaacat 1450
 agaaagaccc catctctaaa taaatgtttt aaaaat 1486

<210> 346
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 346
 Met Glu Leu Pro Phe Val Thr His Leu Phe Leu Pro Leu Val Phe
 1 5 10 15
 Leu Thr Gly Leu Cys Ser Pro Phe Asn Leu Asp Glu His His Pro
 20 25 30
 Arg Leu Phe Pro Gly Pro Pro Glu Ala Glu Phe Gly Tyr Ser Val
 35 40 45
 Leu Gln His Val Gly Gly Gly Gln Arg Trp Met Leu Val Gly Ala
 50 55 60
 Pro Trp Asp Gly Pro Ser Gly Asp Arg Arg Gly Asp Val Tyr Arg
 65 70 75
 Cys Pro Val Gly Gly Ala His Asn Ala Pro Cys Ala Lys Gly His
 80 85 90
 Leu Gly Asp Tyr Gln Leu Gly Asn Ser Ser His Pro Ala Val Asn
 95 100 105
 Met His Leu Gly Met Ser Leu Leu Glu Thr Asp Gly Asp Gly Gly
 110 115 120
 Phe Met Val Ser

<210> 347
 <211> 509
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 22
 <223> unknown base

<400> 347

ggctgccact tgctggctga gcaaccctgg gaaaagtgc ttcacccott 1450
 cggtcctaag ttttctcatc tgtaatgggg gaattaccta cacacctgct 1500
 aaacacacac acacagagtc tctctctata tatacacacg tacacataaa 1550
 tacaccagc acttgcaagg ctagagggaa actggtgaca ctctacagtc 1600
 tgactgattc agtgtttctg gagagcagga cataaatgta tgatgagaat 1650
 gatcaaggac tctacacact ggggtggcttg gagagcccac tttcccagaa 1700
 taatccttga gagaaaagga atcatgggag caatggtgtt gagttcactt 1750
 caagcccaat gccggtgcag aggggaatgg cttagcgagc tctacagtag 1800
 gtgacctgga ggaaggtcac agccacactg aaaatgggat gtgcatgaac 1850
 acggaggatc catgaactac tgtaaagtgt tgacagtgtg tgcacactgc 1900
 agacagcagg tgaaatgtat gtgtgcaatg cgacgagaat gcagaagtca 1950
 gtaacatgtg catgtttgtt gtgctccttt tttctgttgg taaagtacag 2000
 aattcagcaa ataaaaaggg ccaccctggc caaaagcggg aaaaaaaaaa 2050
 aaaaaa 2056

<210> 352
 <211> 311
 <212> PRT
 <213> Homo sapiens

<400> 352
 Met Gln Thr Phe Thr Met Val Leu Glu Glu Ile Trp Thr Ser Leu
 1 5 10 15
 Phe Met Trp Phe Phe Tyr Ala Leu Ile Pro Cys Leu Leu Thr Asp
 20 25 30
 Glu Val Ala Ile Leu Pro Ala Pro Gln Asn Leu Ser Val Leu Ser
 35 40 45
 Thr Asn Met Lys His Leu Leu Met Trp Ser Pro Val Ile Ala Pro
 50 55 60
 Gly Glu Thr Val Tyr Tyr Ser Val Glu Tyr Gln Gly Glu Tyr Glu
 65 70 75
 Ser Leu Tyr Thr Ser His Ile Trp Ile Pro Ser Ser Trp Cys Ser
 80 85 90
 Leu Thr Glu Gly Pro Glu Cys Asp Val Thr Asp Asp Ile Thr Ala
 95 100 105
 Thr Val Pro Tyr Asn Leu Arg Val Arg Ala Thr Leu Gly Ser Gln
 110 115 120

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Ser | Ala | Trp | Ser | Ile | Leu | Lys | His | Pro | Phe | Asn | Arg | Asn | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Ile | Leu | Thr | Arg | Pro | Gly | Met | Glu | Ile | Thr | Lys | Asp | Gly | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| His | Leu | Val | Ile | Glu | Leu | Glu | Asp | Leu | Gly | Pro | Gln | Phe | Glu | Phe | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Val | Ala | Tyr | Trp | Arg | Arg | Glu | Pro | Gly | Ala | Glu | Glu | His | Val | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Met | Val | Arg | Ser | Gly | Gly | Ile | Pro | Val | His | Leu | Glu | Thr | Met | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Glu | Pro | Gly | Ala | Ala | Tyr | Cys | Val | Lys | Ala | Gln | Thr | Phe | Val | Lys | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ala | Ile | Gly | Arg | Tyr | Ser | Ala | Phe | Ser | Gln | Thr | Glu | Cys | Val | Glu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Val | Gln | Gly | Glu | Ala | Ile | Pro | Leu | Val | Leu | Ala | Leu | Phe | Ala | Phe | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | Gly | Phe | Met | Leu | Ile | Leu | Val | Val | Val | Pro | Leu | Phe | Val | Trp | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Met | Gly | Arg | Leu | Leu | Gln | Tyr | Ser | Cys | Cys | Pro | Val | Val | Val | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Pro | Asp | Thr | Leu | Lys | Ile | Thr | Asn | Ser | Pro | Gln | Lys | Leu | Ile | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ser | Cys | Arg | Arg | Glu | Glu | Val | Asp | Ala | Cys | Ala | Thr | Ala | Val | Met | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Pro | Glu | Glu | Leu | Leu | Arg | Ala | Trp | Ile | Ser | | | | | |
| | | | | 305 | | | | | 310 | | | | | | |

<210> 353

<211> 864

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 654, 711, 748, 827

<223> unknown base

<400> 353

tcctgctgat gcacatctgg gtttggcaaa aggaggttgc ttcgagccgc 50

cctttctagc ttcctggccg gctctagaac aattcaggct tcgctgcgac 100

tagacctcag ctccaacata tgcattctga agaaagatgg ctgagatgac 150

agaatgcitt attttggaaa gaaacaatgt tctaggtcaa actgagtcta 200

ccaaatgcag actttcacaa tggttctaga agaaatctgg acaagtcttt 250
 tcatgtgggtt tttctacgca ttgattccat gtttgctcac agatgaagtg 300
 gccattctgc ctgcccctca gaacctctct gtactctcaa ccaacatgaa 350
 gcatctcttg atgtggagcc cagtgatcgc gcctggagaa acagtgtact 400
 attctgtcga ataccagggg gagtacgaga gcctgtacac gagccacatc 450
 tggatcccca gcagctgggtg ctactcact gaaggtcctg agtgtgatgt 500
 cactgatgac atcacggcca ctgtgccata caacctttgt gtcaggcca 550
 cattgggctc acagacctca gcctggagca tcctgaagca tccctttaat 600
 agaaactcaa ccatccttac ccgacctggg atggagatca ccaaagatgg 650
 cttncacctg gttattgagc tggaggacct ggggccccag tttgagttcc 700
 ttgtggccta ntggaggagg ggcgaacccc ttgcggcgca aggggttngc 750
 gaaccccttg cggccgctgg ggtatctctc gagaaaagag aggcccaata 800
 tgaccacat actcaatatg gacgaantgc tattgtccac ctgtttgagt 850
 ggcgctgggt tgat 864

- <210> 354
- <211> 23
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 354
- aggcttcgct gcgactagac ctc 23
- <210> 355
- <211> 24
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 355
- ccaggtcggg taaggatggt tgag 24
- <210> 356
- <211> 50
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe

<400> 356
 tttctacgca ttgattccat gtttgctcac agatgaagtg gccattctgc 50

<210> 357
 <211> 1670
 <212> DNA
 <213> Homo sapiens

<400> 357
 cccacgcgtc cgcccacgcg tccgagggac aagagagaag agagactgaa 50
 acagggagaa gaggcaggag aggaggaggt ggggagagca cgaagctgga 100
 ggccgacact gagggagggc gggaggaggt gaagaaggag agaggggaga 150
 agaggcagga gctggaaagg agagagggag gaggaggagg agatgcggga 200
 tggagacctg gagttaggtg gcttgggaga gcttaatgaa aagagaacgg 250
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 gctgagagga gtaggaagat caggagctag agggagactg gagggttccg 350
 ggaaaagagc agaggaaaga ggaaagacac agagagacgg gagagagaag 400
 aagagtgggt ttgaagggcg gatctcagtc cctggctgct ttggcatttg 450
 gggaactggg actccctgtg gggaggagag gaaagctgga agtcctggag 500
 ggacagggtc ccagaaggag gggacagagg agctgagaga ggggggcagg 550
 gcgttgggca ggggtccctc ggaggcctcc tggggatggg ggctgcagct 600
 cgtctgagcg cccctcagac gctgggtactc tgggctgcac tgggggcagc 650
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 ataatctcca gggaaacttc gtgccagggc ctcctttctg gggcctggtg 750
 aatgcagcgt ggagtctgtg tgctgtgggg aagcggcaga gccccgtgga 800
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 catgtctcct tctgcctgc accccgacct gtggtcaatg tgtctggagg 950
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 ctgcgcagcg agccggctcg gaacatcaga tcaaccacca gggcttctct 1050
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gagcctggag ctctgttcc ctgaatcctt cggttcac acctatcagg 1300
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gtcctaagcc tccccacaag gcgaggggag ttaccacctaa aacaaagcta 1650
ttaaaggac agaatactta 1670

<210> 358
<211> 328
<212> PRT
<213> Homo sapiens

<400> 358
Met Gly Ala Ala Ala Arg Leu Ser Ala Pro Arg Ala Leu Val Leu
1 5 10 15
Trp Ala Ala Leu Gly Ala Ala Ala His Ile Gly Pro Ala Pro Asp
20 25 30
Pro Glu Asp Trp Trp Ser Tyr Lys Asp Asn Leu Gln Gly Asn Phe
35 40 45
Val Pro Gly Pro Pro Phe Trp Gly Leu Val Asn Ala Ala Trp Ser
50 55 60
Leu Cys Ala Val Gly Lys Arg Gln Ser Pro Val Asp Val Glu Leu
65 70 75
Lys Arg Val Leu Tyr Asp Pro Phe Leu Pro Pro Leu Arg Leu Ser
80 85 90
Thr Gly Gly Glu Lys Leu Arg Gly Thr Leu Tyr Asn Thr Gly Arg
95 100 105
His Val Ser Phe Leu Pro Ala Pro Arg Pro Val Val Asn Val Ser
110 115 120
Gly Gly Pro Leu Leu Tyr Ser His Arg Leu Ser Glu Leu Arg Leu
125 130 135
Leu Phe Gly Ala Arg Asp Gly Ala Gly Ser Glu His Gln Ile Asn
140 145 150
His Gln Gly Phe Ser Ala Glu Val Gln Leu Ile His Phe Asn Gln
155 160 165
Glu Leu Tyr Gly Asn Phe Ser Ala Ala Ser Arg Gly Pro Asn Gly

| 170 | 175 | 180 |
|-------------------------------------|-------------------------|-----|
| Leu Ala Ile Leu Ser Leu Phe Val Asn | Val Ala Ser Thr Ser Asn | |
| 185 | 190 | 195 |
| Pro Phe Leu Ser Arg Leu Leu Asn Arg | Asp Thr Ile Thr Arg Ile | |
| 200 | 205 | 210 |
| Ser Tyr Lys Asn Asp Ala Tyr Phe Leu | Gln Asp Leu Ser Leu Glu | |
| 215 | 220 | 225 |
| Leu Leu Phe Pro Glu Ser Phe Gly Phe | Ile Thr Tyr Gln Gly Ser | |
| 230 | 235 | 240 |
| Leu Ser Thr Pro Pro Cys Ser Glu Thr | Val Thr Trp Ile Leu Ile | |
| 245 | 250 | 255 |
| Asp Arg Ala Leu Asn Ile Thr Ser Leu | Gln Met His Ser Leu Arg | |
| 260 | 265 | 270 |
| Leu Leu Ser Gln Asn Pro Pro Ser Gln | Ile Phe Gln Ser Leu Ser | |
| 275 | 280 | 285 |
| Gly Asn Ser Arg Pro Leu Gln Pro Leu | Ala His Arg Ala Leu Arg | |
| 290 | 295 | 300 |
| Gly Asn Arg Asp Pro Arg His Pro Glu | Arg Arg Cys Arg Gly Pro | |
| 305 | 310 | 315 |
| Asn Tyr Arg Leu His Val Asp Gly Val | Pro His Gly Arg | |
| 320 | 325 | |

<210> 359
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 359
 tctgctgagg tgcagctcat tcac 24

<210> 360
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 360
 gaggtctgtg aagatctgag atgg 24

<210> 361
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 361
gcctctttgt caacgttgcc agtacctcta acccattcct cagtcgcctc 50

<210> 362
<211> 3038
<212> DNA
<213> Homo sapiens

<400> 362
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ccgccagcct ccgccgccga gctctgttcg tgtccccgcc cctcgctcct 100
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gcagctccct tcccaccca actgcaggtc taattttgga cgctttgcct 200
gccatttctt ccaggttgag ggagccgcag aggcggaggc tcgctattc 250
ctgcagtcag caccacgctc gccccggac gctcgggtgt caggcccttc 300
gcgagcgggg ctctccgtct gcggtccctt gtgaaggctc tgggcggctg 350
cagaggccgg ccgtccggtt tggctcacct ctcccaggaa acttcacact 400
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atcctgaggt cattcattat gaagtgtacc gcgcgggagt ggctcagagt 500
aaccacagtg ctgttcatgg ctagagcaat tccagccatg gtggttccca 550
atgccacttt attggagaaa cttttggaaa aatacatgga tgaggatggt 600
gagtgggtgga tagccaaaca acgagggaaa agggccatca cagacaatga 650
catgcagagt attttggaac ttcataataa attacgaagt caggtgtatc 700
caacagcctc taatatggag tatatgacat gggatgtaga gctggaaaga 750
tctgcagaat cctgggctga aagttgcttg tgggaacatg gacctgcaag 800
cttgcttcca tcaattggac agaatttggg agcacactgg ggaagatata 850
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ctggtggggc catgcccctt acaaacatgg gcggccctgt tctgcttgcc 1150

cacctagttt tggagggggc tgtagagaaa atctgtgcta caaagaagg 1200
tcagacaggt attatcccc tcgagaagag gaaacaaatg aaatagaacg 1250
acagcagtca caagtccatg acacccatgt ccggacaaga tcagatgata 1300
gtagcagaaa tgaagtcata agcgcacagc aaatgtccca aattgtttct 1350
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cgaatgtcct gctggctgtt tggatagtaa agctaaagtt attggcagtg 1450
tacattatga aatgcaatcc agcatctgta gagctgcaat tcattatggt 1500
ataatagaca atgatgggtg ctgggtagat atcactagac aaggaagaaa 1550
gcattatttc atcaagtcca atagaaatgg tattcaaaca attggcaa 1600
atcagtctgc taattccttc acagtctcta aagtaacagt tcaggctgtg 1650
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tgcagagcag cagtacatgc tggagtgggt cgaaatcacg gtggttatgt 1850
tgatgtaatg cctgtggaca aaagaaagac ctacattgct tcttttcaga 1900
atggaatcct ctcagaaagt ttacagaatc ctccaggagg aaaggcattc 1950
agagtgtttg ctgttggtg aaactgaata cttggaagag gaccataaag 2000
actattccaa atgcaatatt tctgaatttt gtataaaaact gtaacattac 2050
tgtacagagt acatcaacta ttttcagccc aaaaagggtgc caaatgcata 2100
taaactctga taaacaaagt ctataaaata aaacatggga cattagcttt 2150
gggaaaagta atgaaaatat aatggtttta gaaatcctgt gttaaataatt 2200
gctatatatt cttagcagtt atttctacag ttaattacat agtcatgatt 2250
gttctacgtt tcatatatta tatgggtgctt tgtatatgcc actaataaaa 2300
tgaatctaaa cattgaatgt gaatggccct cagaaaatca tctagtgc 2350
ttaaaaaata tcgactctaa aactgaaaga aaccttatca cattttcccc 2400
agttcaatgc tatgccatta ccaactccaa ataatctcaa ataattttcc 2450
acttaataac tgtaaagttt ttttctgtta atttaggcat atagaatatt 2500
aaattctgat attgcacttc ttattttata taaaataatc ctttaatatc 2550
caaatgaatc tgttaaaatg tttgattcct tgggaatggc cttaaaaata 2600

aatgtaataa agtcagagtg gtggtatgaa aacattccta gtgatcatgt 2650
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 attaccattg ccaactgattt tttttaaatg gtaaatgacc ttgtatataa 2850
 atattgccat atcatggtac ctataatggt gatataattg tttctatgaa 2900
 aaatgtattg tgctttgata ctaaaaatct gtaaaatggt agttttggta 2950
 attttttttc tgctgggtgga tttacatatt aaattttttc tgctgggtgga 3000
 taaacattaa aattaatcat gtttcaaaaa aaaaaaaaa 3038

<210> 363

<211> 500

<212> PRT

<213> Homo sapiens

<400> 363

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Cys | Thr | Ala | Arg | Glu | Trp | Leu | Arg | Val | Thr | Thr | Val | Leu |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Phe | Met | Ala | Arg | Ala | Ile | Pro | Ala | Met | Val | Val | Pro | Asn | Ala | Thr |
| | | | | 20 | | | | 25 | | | | | 30 | |
| Leu | Leu | Glu | Lys | Leu | Leu | Glu | Lys | Tyr | Met | Asp | Glu | Asp | Gly | Glu |
| | | | | 35 | | | | 40 | | | | | 45 | |
| Trp | Trp | Ile | Ala | Lys | Gln | Arg | Gly | Lys | Arg | Ala | Ile | Thr | Asp | Asn |
| | | | | 50 | | | | 55 | | | | | 60 | |
| Asp | Met | Gln | Ser | Ile | Leu | Asp | Leu | His | Asn | Lys | Leu | Arg | Ser | Gln |
| | | | | 65 | | | | 70 | | | | | 75 | |
| Val | Tyr | Pro | Thr | Ala | Ser | Asn | Met | Glu | Tyr | Met | Thr | Trp | Asp | Val |
| | | | | 80 | | | | 85 | | | | | 90 | |
| Glu | Leu | Glu | Arg | Ser | Ala | Glu | Ser | Trp | Ala | Glu | Ser | Cys | Leu | Trp |
| | | | | 95 | | | | 100 | | | | | 105 | |
| Glu | His | Gly | Pro | Ala | Ser | Leu | Leu | Pro | Ser | Ile | Gly | Gln | Asn | Leu |
| | | | | 110 | | | | 115 | | | | | 120 | |
| Gly | Ala | His | Trp | Gly | Arg | Tyr | Arg | Pro | Pro | Thr | Phe | His | Val | Gln |
| | | | | 125 | | | | 130 | | | | | 135 | |
| Ser | Trp | Tyr | Asp | Glu | Val | Lys | Asp | Phe | Ser | Tyr | Pro | Tyr | Glu | His |
| | | | | 140 | | | | 145 | | | | | 150 | |
| Glu | Cys | Asn | Pro | Tyr | Cys | Pro | Phe | Arg | Cys | Ser | Gly | Pro | Val | Cys |
| | | | | 155 | | | | 160 | | | | | 165 | |
| Thr | His | Tyr | Thr | Gln | Val | Val | Trp | Ala | Thr | Ser | Asn | Arg | Ile | Gly |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asp | Lys | Arg | Lys | Thr | Tyr | Ile | Ala | Ser | Phe | Gln | Asn | Gly | Ile |
| | | | | 470 | | | | | 475 | | | | | 480 |
| | | | | | | | | | | | | | | |
| Phe | Ser | Glu | Ser | Leu | Gln | Asn | Pro | Pro | Gly | Gly | Lys | Ala | Phe | Arg |
| | | | | 485 | | | | | 490 | | | | | 495 |
| | | | | | | | | | | | | | | |
| Val | Phe | Ala | Val | Val | | | | | | | | | | |
| | | | | 500 | | | | | | | | | | |

<210> 364
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 364
 ggacagaatt tgggagcaca ctgg 24

<210> 365
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<220>
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<400> 365
 ccaagagtat actgtcctcg 20

<210> 366
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<220>
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<400> 366
 agcacagatt ttctctacag ccccc 25

<210> 367
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<220>
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<400> 367
 aaccactcca gcatgtactg ctgc 24

<210> 368
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 <213> Artificial Sequence

<220>
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<400> 368
ccattcaggt gttctggccc tgtatgtaca cattatacac aggtcgtgtg 50

<210> 369

<211> 1685

<212> DNA

<213> Homo sapiens

<400> 369
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ggccagcgcc ctcccatgt ccctgctccc acgccgcgcc cctccggtca 200
gcatgaggct cctggcggcc gcgctgctcc tgctgctgct ggcgctgtac 250
accgcgcgtg tggacgggtc caaatgcaag tgctcccgga agggacccaa 300
gatccgctac agcgacgtga agaagctgga aatgaagcca aagtaccgcg 350
actgcgagga gaagatggtt atcatcacca ccaagagcgt gtccaggtag 400
cgaggtcagg agcactgcct gcacccaag ctgcagagca ccaagcgctt 450
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 ataaaatata ttgaaatgt aaaaaaaaaa aaaaa 1685

<210> 370
 <211> 111
 <212> PRT
 <213> Homo sapiens

<400> 370
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 Leu Ala Ala Ala Leu Leu Leu Leu Leu Leu Ala Leu Tyr Thr Ala
 20 25 30
 Arg Val Asp Gly Ser Lys Cys Lys Cys Ser Arg Lys Gly Pro Lys
 35 40 45
 Ile Arg Tyr Ser Asp Val Lys Lys Leu Glu Met Lys Pro Lys Tyr
 50 55 60
 Pro His Cys Glu Glu Lys Met Val Ile Ile Thr Thr Lys Ser Val
 65 70 75
 Ser Arg Tyr Arg Gly Gln Glu His Cys Leu His Pro Lys Leu Gln
 80 85 90
 Ser Thr Lys Arg Phe Ile Lys Trp Tyr Asn Ala Trp Asn Glu Lys
 95 100 105
 Arg Arg Val Tyr Glu Glu
 110

<210> 371
 <211> 22
 <212> DNA
 <213> Artificial Sequence
 <220>

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tctttggctc gggggctggg gctcctgtg tcagcctgtt gacctgtcc 850
cactactcag aaggtctctt ccagaaggcc atcattcaga gcggcaccgc 900
cctgtccagc tgggcagtga actaccagcc ggccaagtac actcggatat 950
tggcagacaa ggtcggctgc aacatgctgg acaccacgga catggtagaa 1000
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ggcagattcg gccatggtg atgaggtccc ctatgtcttc ggcatcccca 1550
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atgctcagcg ccgtggctcat gacctactgg acgaacttcg ccaaaactgg 1650
tgatccaaat caaccagttc ctcaggatac caagttcatt cacacaaaac 1700
ccaaccgctt tgaagaagtg gcctgggtcca agtataatcc caaagaccag 1750
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aacgaaagtg gctttctggt tggaactcgt tcctcatttg cacaacttga 1850
acgagatatt ccagtatgtt tcaacaacca caaagggttc tccaccagac 1900
atgacatcat ttccctatgg caccggcgga tctcccgcca agatatggcc 1950
aaccacaaa cggccagcaa tcaactcctg caacaatccc aaactctta 2000
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agagaaggaa acgtagaaat ttattattaa aagaatggac tgtgcagcga 3050
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taagagactt tgt 3113

<210> 375

<211> 816

<212> PRT

<213> Homo sapiens

<400> 375

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Asn | Ser | Asn | Val | Leu | Leu | Trp | Leu | Thr | Ala | Leu | Ala | Ile |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| Lys | Phe | Thr | Leu | Ile | Asp | Ser | Gln | Ala | Gln | Tyr | Pro | Val | Val | Asn |
| | | | 20 | | | | | 25 | | | | | | 30 |
| Thr | Asn | Tyr | Gly | Lys | Ile | Arg | Gly | Leu | Arg | Thr | Pro | Leu | Pro | Asn |
| | | | 35 | | | | | 40 | | | | | | 45 |
| Glu | Ile | Leu | Gly | Pro | Val | Glu | Gln | Tyr | Leu | Gly | Val | Pro | Tyr | Ala |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|
| Ser | Pro | Pro | Thr | Gly | Glu | Arg | Arg | Phe | Gln | Pro | Pro | Glu | Pro | Pro | 50 | 55 | 60 |
| | | | | 65 | | | | | 70 | | | | | 75 | | | |
| Ser | Ser | Trp | Thr | Gly | Ile | Arg | Asn | Thr | Thr | Gln | Phe | Ala | Ala | Val | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | |
| Cys | Pro | Gln | His | Leu | Asp | Glu | Arg | Ser | Leu | Leu | His | Asp | Met | Leu | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | |
| Pro | Ile | Trp | Phe | Thr | Ala | Asn | Leu | Asp | Thr | Leu | Met | Thr | Tyr | Val | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | |
| Gln | Asp | Gln | Asn | Glu | Asp | Cys | Leu | Tyr | Leu | Asn | Ile | Tyr | Val | Pro | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | |
| Thr | Glu | Asp | Gly | Ala | Asn | Thr | Lys | Lys | Asn | Ala | Asp | Asp | Ile | Thr | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | |
| Ser | Asn | Asp | Arg | Gly | Glu | Asp | Glu | Asp | Ile | His | Asp | Gln | Asn | Ser | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | |
| Lys | Lys | Pro | Val | Met | Val | Tyr | Ile | His | Gly | Gly | Ser | Tyr | Met | Glu | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | |
| Gly | Thr | Gly | Asn | Met | Ile | Asp | Gly | Ser | Ile | Leu | Ala | Ser | Tyr | Gly | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | |
| Asn | Val | Ile | Val | Ile | Thr | Ile | Asn | Tyr | Arg | Leu | Gly | Ile | Leu | Gly | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | |
| Phe | Leu | Ser | Thr | Gly | Asp | Gln | Ala | Ala | Lys | Gly | Asn | Tyr | Gly | Leu | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | |
| Leu | Asp | Gln | Ile | Gln | Ala | Leu | Arg | Trp | Ile | Glu | Glu | Asn | Val | Gly | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | |
| Ala | Phe | Gly | Gly | Asp | Pro | Lys | Arg | Val | Thr | Ile | Phe | Gly | Ser | Gly | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| Ala | Gly | Ala | Ser | Cys | Val | Ser | Leu | Leu | Thr | Leu | Ser | His | Tyr | Ser | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | |
| Glu | Gly | Leu | Phe | Gln | Lys | Ala | Ile | Ile | Gln | Ser | Gly | Thr | Ala | Leu | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | |
| Ser | Ser | Trp | Ala | Val | Asn | Tyr | Gln | Pro | Ala | Lys | Tyr | Thr | Arg | Ile | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | |
| Leu | Ala | Asp | Lys | Val | Gly | Cys | Asn | Met | Leu | Asp | Thr | Thr | Asp | Met | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | |
| Val | Glu | Cys | Leu | Arg | Asn | Lys | Asn | Tyr | Lys | Glu | Leu | Ile | Gln | Gln | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | |
| Thr | Ile | Thr | Pro | Ala | Thr | Tyr | His | Ile | Ala | Phe | Gly | Pro | Val | Ile | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Asp Gly Asp Val | Ile Pro Asp Asp Pro | Gln Ile Leu Met Glu | Gln |
| 350 | 355 | | 360 |
| Gly Glu Phe Leu | Asn Tyr Asp Ile Met | Leu Gly Val Asn Gln | Gly |
| 365 | 370 | | 375 |
| Glu Gly Leu Lys | Phe Val Asp Gly Ile | Val Asp Asn Glu Asp | Gly |
| 380 | 385 | | 390 |
| Val Thr Pro Asn | Asp Phe Asp Phe Ser | Val Ser Asn Phe Val | Asp |
| 395 | 400 | | 405 |
| Asn Leu Tyr Gly | Tyr Pro Glu Gly Lys | Asp Thr Leu Arg Glu | Thr |
| 410 | 415 | | 420 |
| Ile Lys Phe Met | Tyr Thr Asp Trp Ala | Asp Lys Glu Asn Pro | Glu |
| 425 | 430 | | 435 |
| Thr Arg Arg Lys | Thr Leu Val Ala Leu | Phe Thr Asp His Gln | Trp |
| 440 | 445 | | 450 |
| Val Ala Pro Ala | Val Ala Ala Asp Leu | His Ala Gln Tyr Gly | Ser |
| 455 | 460 | | 465 |
| Pro Thr Tyr Phe | Tyr Ala Phe Tyr His | His Cys Gln Ser Glu | Met |
| 470 | 475 | | 480 |
| Lys Pro Ser Trp | Ala Asp Ser Ala His | Gly Asp Glu Val Pro | Tyr |
| 485 | 490 | | 495 |
| Val Phe Gly Ile | Pro Met Ile Gly Pro | Thr Glu Leu Phe Ser | Cys |
| 500 | 505 | | 510 |
| Asn Phe Ser Lys | Asn Asp Val Met Leu | Ser Ala Val Val Met | Thr |
| 515 | 520 | | 525 |
| Tyr Trp Thr Asn | Phe Ala Lys Thr Gly | Asp Pro Asn Gln Pro | Val |
| 530 | 535 | | 540 |
| Pro Gln Asp Thr | Lys Phe Ile His Thr | Lys Pro Asn Arg Phe | Glu |
| 545 | 550 | | 555 |
| Glu Val Ala Trp | Ser Lys Tyr Asn Pro | Lys Asp Gln Leu Tyr | Leu |
| 560 | 565 | | 570 |
| His Ile Gly Leu | Lys Pro Arg Val Arg | Asp His Tyr Arg Ala | Thr |
| 575 | 580 | | 585 |
| Lys Val Ala Phe | Trp Leu Glu Leu Val | Pro His Leu His Asn | Leu |
| 590 | 595 | | 600 |
| Asn Glu Ile Phe | Gln Tyr Val Ser Thr | Thr Thr Lys Val Pro | Pro |
| 605 | 610 | | 615 |
| Pro Asp Met Thr | Ser Phe Pro Tyr Gly | Thr Arg Arg Ser Pro | Ala |
| 620 | 625 | | 630 |
| Lys Ile Trp Pro | Thr Thr Lys Arg Pro | Ala Ile Thr Pro | Ala |
| | | | Asn |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| | 635 | | 640 | | 645 |
| Asn Pro Lys His | Ser Lys Asp Pro His | Lys Thr Gly Pro Glu Asp | | | |
| | 650 | 655 | | 660 | |
| Thr Thr Val Leu | Ile Glu Thr Lys Arg | Asp Tyr Ser Thr Glu Leu | | | |
| | 665 | 670 | | 675 | |
| Ser Val Thr Ile | Ala Val Gly Ala Ser | Leu Leu Phe Leu Asn Ile | | | |
| | 680 | 685 | | 690 | |
| Leu Ala Phe Ala | Ala Leu Tyr Tyr Lys | Lys Asp Lys Arg Arg His | | | |
| | 695 | 700 | | 705 | |
| Glu Thr His Arg | Arg Pro Ser Pro Gln | Arg Asn Thr Thr Asn Asp | | | |
| | 710 | 715 | | 720 | |
| Ile Ala His Ile | Gln Asn Glu Glu Ile | Met Ser Leu Gln Met Lys | | | |
| | 725 | 730 | | 735 | |
| Gln Leu Glu His | Asp His Glu Cys Glu | Ser Leu Gln Ala His Asp | | | |
| | 740 | 745 | | 750 | |
| Thr Leu Arg Leu | Thr Cys Pro Pro Asp | Tyr Thr Leu Thr Leu Arg | | | |
| | 755 | 760 | | 765 | |
| Arg Ser Pro Asp | Asp Ile Pro Leu Met | Thr Pro Asn Thr Ile Thr | | | |
| | 770 | 775 | | 780 | |
| Met Ile Pro Asn | Thr Leu Thr Gly Met | Gln Pro Leu His Thr Phe | | | |
| | 785 | 790 | | 795 | |
| Asn Thr Phe Ser | Gly Gly Gln Asn Ser | Thr Asn Leu Pro His Gly | | | |
| | 800 | 805 | | 810 | |
| His Ser Thr Thr | Arg Val | | | | |
| | 815 | | | | |

<210> 376

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 376

ggcaagctac ggaaacgtca tcgtg 25

<210> 377

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 377

aacccccgag ccaaaagatg gtcac 25

<210> 378

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 378

gtaccggtga ccaggcagca aaaggcaact atgggctcct ggatcag 47

<210> 379

<211> 2461

<212> DNA

<213> Homo sapiens

<400> 379

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 ttgttggggt ctgggcaggg gccacagcaa gtcggggcgg gtcaaactgt 150
 cgagtacttg aaacgggagc actcgtctgc gaagccctac cagggtgtgg 200
 gcacaggcag ttcctcactg tggaatctga tgggcaatgc catggtgatg 250
 acccagtata tccgccttac ccagatatg caaagtaaac aggggtgcctt 300
 gtggaaccgg gtgccatgtt tcctgagaga ctgggagttg cagggtgcact 350
 tcaaaatcca tggacaagga aagaagaatc tgcattggga tggcttggca 400
 atctggtaca caaaggatcg gatgcagcca gggcctgtgt ttggaaacat 450
 ggacaaattt gtggggctgg gagtatttgt agacacctac cccaatgagg 500
 agaagcagca agagcgggta ttccccatca tctcagccat ggtgaacaac 550
 ggctccctca gctatgatca tgagcgggat gggcggccta cagagctggg 600
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 ttcgctacgt caagaggcat ttgacgataa tgatggatat tgatggcaag 700
 catgagtgga gggactgcat tgaagtgccg ggagtccgcc tgccccgggg 750
 ctactacttc ggcacctcct ccactactgg ggatctctca gataatcatg 800
 atgtcatttc cttgaagttg tttgaactga cagtggagag aaccccagaa 850
 gaggaaaagc tccatcgaga tgtgttcttg ccctcagtgg acaatatgaa 900
 gctgcctgag atgacagctc cactgccgcc cctgagtggc ctggccctct 950
 tcctcatcgt ctttttctcc ctgggtgttt ctgtatttgc catagtcatt 1000

| Variable | Mean | SD | Min | Max |
|-----------------------|------|------|-----|------|
| Age | 38.5 | 12.5 | 18 | 65 |
| Gender | 0.5 | 0.5 | 0 | 1 |
| Marital status | 0.7 | 0.5 | 0 | 1 |
| Education | 12.5 | 2.5 | 8 | 16 |
| Income | 1500 | 500 | 500 | 3000 |
| Health status | 0.8 | 0.4 | 0 | 1 |
| Exercise frequency | 0.3 | 0.5 | 0 | 1 |
| Stress level | 0.6 | 0.5 | 0 | 1 |
| Sleep quality | 0.7 | 0.4 | 0 | 1 |
| Diet quality | 0.6 | 0.5 | 0 | 1 |
| Work-life balance | 0.5 | 0.5 | 0 | 1 |
| Family support | 0.7 | 0.4 | 0 | 1 |
| Community involvement | 0.4 | 0.5 | 0 | 1 |
| Life satisfaction | 0.6 | 0.5 | 0 | 1 |
| Overall well-being | 0.6 | 0.5 | 0 | 1 |

<211> 348

<213> Homo sapiens

<400> 380

Pro Gly Val Arg Leu Pro Arg Gly Tyr Tyr Phe Gly Thr Ser Ser
245 250 255

| | | |
|-----------------|---------------------|-------------------------|
| Ile Thr Gly Asp | Leu Ser Asp Asn His | Asp Val Ile Ser Leu Lys |
| 260 | 265 | 270 |
| Leu Phe Glu Leu | Thr Val Glu Arg Thr | Pro Glu Glu Glu Lys Leu |
| 275 | 280 | 285 |
| His Arg Asp Val | Phe Leu Pro Ser Val | Asp Asn Met Lys Leu Pro |
| 290 | 295 | 300 |
| Glu Met Thr Ala | Pro Leu Pro Pro Leu | Ser Gly Leu Ala Leu Phe |
| 305 | 310 | 315 |
| Leu Ile Val Phe | Phe Ser Leu Val Phe | Ser Val Phe Ala Ile Val |
| 320 | 325 | 330 |
| Ile Gly Ile Ile | Leu Tyr Asn Lys Trp | Gln Glu Gln Ser Arg Lys |
| 335 | 340 | 345 |

Arg Phe Tyr

<210> 381
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 381
 ccttgggtcg tggcagcagt gg 22

<210> 382
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 382
 cactctccag gctgcatgct cagg 24

<210> 383
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 383
 gtcaaacgtt cgagtacttg aaacgggagc actcgctgtc gaagc 45

<210> 384
 <211> 3150
 <212> DNA
 <213> Homo sapiens

<400> 384

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ggggactcca agatttccat gaagaaaatc agttgtcttc attcaagaat 150
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<211> 480

<212> PRT

<213> Homo sapiens

<400> 385

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| Met | Leu | Phe | Arg | Asn | Arg | Phe | Leu | Leu | Leu | Leu | Ala | Leu | Ala | Ala | 1 | 5 | 10 | 15 |
| Leu | Leu | Ala | Phe | Val | Ser | Leu | Ser | Leu | Gln | Phe | Phe | His | Leu | Ile | 20 | 25 | 30 | |
| Pro | Val | Ser | Thr | Pro | Lys | Asn | Gly | Met | Ser | Ser | Lys | Ser | Arg | Lys | 35 | 40 | 45 | |
| Arg | Ile | Met | Pro | Asp | Pro | Val | Thr | Glu | Pro | Pro | Val | Thr | Asp | Pro | 50 | 55 | 60 | |
| Val | Tyr | Glu | Ala | Leu | Leu | Tyr | Cys | Asn | Ile | Pro | Ser | Val | Ala | Glu | 65 | 70 | 75 | |
| Arg | Ser | Met | Glu | Gly | His | Ala | Pro | His | His | Phe | Lys | Leu | Val | Ser | 80 | 85 | 90 | |
| Val | His | Val | Phe | Ile | Arg | His | Gly | Asp | Arg | Tyr | Pro | Leu | Tyr | Val | 95 | 100 | 105 | |
| Ile | Pro | Lys | Thr | Lys | Arg | Pro | Glu | Ile | Asp | Cys | Thr | Leu | Val | Ala | 110 | 115 | 120 | |
| Asn | Arg | Lys | Pro | Tyr | His | Pro | Lys | Leu | Glu | Ala | Phe | Ile | Ser | His | 125 | 130 | 135 | |
| Met | Ser | Lys | Gly | Ser | Gly | Ala | Ser | Phe | Glu | Ser | Pro | Leu | Asn | Ser | 140 | 145 | 150 | |
| Leu | Pro | Leu | Tyr | Pro | Asn | His | Pro | Leu | Cys | Glu | Met | Gly | Glu | Leu | 155 | 160 | 165 | |
| Thr | Gln | Thr | Gly | Val | Val | Gln | His | Leu | Gln | Asn | Gly | Gln | Leu | Leu | 170 | 175 | 180 | |
| Arg | Asp | Ile | Tyr | Leu | Lys | Lys | His | Lys | Leu | Leu | Pro | Asn | Asp | Trp | 185 | 190 | 195 | |
| Ser | Ala | Asp | Gln | Leu | Tyr | Leu | Glu | Thr | Thr | Gly | Lys | Ser | Arg | Thr | 200 | 205 | 210 | |

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 <220>
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 <210> 388
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 <212> DNA
 <213> Homo sapiens

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 gccgctgttc accaatcggg gagagaaaag cggagatcct gctcgccttg 200

 cacgcgcctg aagcacaaag cagatagcta ggaatgaacc atccctggga 250

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<210> 390
 <211> 916
 <212> PRT
 <213> Homo sapiens
 <400> 390

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ile | Pro | Ala | Arg | Leu | His | Arg | Asp | Tyr | Lys | Gly | Leu | Val | Leu | 1 | 5 | 10 | 15 |
| Leu | Gly | Ile | Leu | Leu | Gly | Thr | Leu | Trp | Glu | Thr | Gly | Cys | Thr | Gln | 20 | 25 | 30 | |
| Ile | Arg | Tyr | Ser | Val | Pro | Glu | Glu | Leu | Glu | Lys | Gly | Ser | Arg | Val | 35 | 40 | 45 | |
| Gly | Asp | Ile | Ser | Arg | Asp | Leu | Gly | Leu | Glu | Pro | Arg | Glu | Leu | Ala | 50 | 55 | 60 | |
| Glu | Arg | Gly | Val | Arg | Ile | Ile | Pro | Arg | Gly | Arg | Thr | Gln | Leu | Phe | 65 | 70 | 75 | |
| Ala | Leu | Asn | Pro | Arg | Ser | Gly | Ser | Leu | Val | Thr | Ala | Gly | Arg | Ile | 80 | 85 | 90 | |
| Asp | Arg | Glu | Glu | Leu | Cys | Met | Gly | Ala | Ile | Lys | Cys | Gln | Leu | Asn | 95 | 100 | 105 | |
| Leu | Asp | Ile | Leu | Met | Glu | Asp | Lys | Val | Lys | Ile | Tyr | Gly | Val | Glu | 110 | 115 | 120 | |
| Val | Glu | Val | Arg | Asp | Ile | Asn | Asp | Asn | Ala | Pro | Tyr | Phe | Arg | Glu | 125 | 130 | 135 | |
| Ser | Glu | Leu | Glu | Ile | Lys | Ile | Ser | Glu | Asn | Ala | Ala | Thr | Glu | Met | 140 | 145 | 150 | |
| Arg | Phe | Pro | Leu | Pro | His | Ala | Trp | Asp | Pro | Asp | Ile | Gly | Lys | Asn | 155 | 160 | 165 | |
| Ser | Leu | Gln | Ser | Tyr | Glu | Leu | Ser | Pro | Asn | Thr | His | Phe | Ser | Leu | 170 | 175 | 180 | |
| Ile | Val | Gln | Asn | Gly | Ala | Asp | Gly | Ser | Lys | Tyr | Pro | Glu | Leu | Val | 185 | 190 | 195 | |
| Leu | Lys | Arg | Ala | Leu | Asp | Arg | Glu | Glu | Lys | Ala | Ala | His | His | Leu | 200 | 205 | 210 | |
| Val | Leu | Thr | Ala | Ser | Asp | Gly | Gly | Asp | Pro | Val | Arg | Thr | Gly | Thr | 215 | 220 | 225 | |
| Ala | Arg | Ile | Arg | Val | Met | Val | Leu | Asp | Ala | Asn | Asp | Asn | Ala | Pro | 230 | 235 | 240 | |
| Ala | Phe | Ala | Gln | Pro | Glu | Tyr | Arg | Ala | Ser | Val | Pro | Glu | Asn | Leu | 245 | 250 | 255 | |
| Ala | Leu | Gly | Thr | Gln | Leu | Leu | Val | Val | Asn | Ala | Thr | Asp | Pro | Asp | 260 | 265 | 270 | |
| Glu | Gly | Val | Asn | Ala | Glu | Val | Arg | Tyr | Ser | Phe | Arg | Tyr | Val | Asp | 275 | 280 | 285 | |
| Asp | Lys | Ala | Ala | Gln | Val | Phe | Lys | Leu | Asp | Cys | Asn | Ser | Gly | Thr | | | | |

| 290 | 295 | 300 |
|--|--------------------------------|-----|
| Ile Ser Thr Ile Gly Glu Leu Asp His 305 | Glu Glu Ser Gly Phe Tyr 310 | |
| Gln Met Glu Val Gln Ala Met Asp Asn 320 | Ala Gly Tyr Ser Ala Arg 325 | 330 |
| Ala Lys Val Leu Ile Thr Val Leu Asp 335 | Val Asn Asp Asn Ala Pro 340 | 345 |
| Glu Val Val Leu Thr Ser Leu Ala Ser 350 | Ser Val Pro Glu Asn Ser 355 | 360 |
| Pro Arg Gly Thr Leu Ile Ala Leu Leu 365 | Asn Val Asn Asp Gln Asp 370 | 375 |
| Ser Glu Glu Asn Gly Gln Val Ile Cys 380 | Phe Ile Gln Gly Asn Leu 385 | 390 |
| Pro Phe Lys Leu Glu Lys Ser Tyr Gly 395 | Asn Tyr Tyr Ser Leu Val 400 | 405 |
| Thr Asp Ile Val Leu Asp Arg Glu Gln 410 | Val Pro Ser Tyr Asn Ile 415 | 420 |
| Thr Val Thr Ala Thr Asp Arg Gly Thr 425 | Pro Pro Leu Ser Thr Glu 430 | 435 |
| Thr His Ile Ser Leu Asn Val Ala Asp 440 | Thr Asn Asp Asn Pro Pro 445 | 450 |
| Val Phe Pro Gln Ala Ser Tyr Ser Ala 455 | Tyr Ile Pro Glu Asn Asn 460 | 465 |
| Pro Arg Gly Val Ser Leu Val Ser Val 470 | Thr Ala His Asp Pro Asp 475 | 480 |
| Cys Glu Glu Asn Ala Gln Ile Thr Tyr 485 | Ser Leu Ala Glu Asn Thr 490 | 495 |
| Ile Gln Gly Ala Ser Leu Ser Ser Tyr 500 | Val Ser Ile Asn Ser Asp 505 | 510 |
| Thr Gly Val Leu Tyr Ala Leu Ser Ser 515 | Phe Asp Tyr Glu Gln Phe 520 | 525 |
| Arg Asp Leu Gln Val Lys Val Met Ala 530 | Arg Asp Asn Gly His Pro 535 | 540 |
| Pro Leu Ser Ser Asn Val Ser Leu Ser 545 | Leu Phe Val Leu Asp Gln 550 | 555 |
| Asn Asp Asn Ala Pro Glu Ile Leu Tyr 560 | Pro Ala Leu Pro Thr Asp 565 | 570 |
| Gly Ser Thr Gly Val Glu Leu Ala Pro 575 | Arg Ser Ala Glu Pro Gly 580 | 585 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Leu | Val | Thr | Lys | Val | Val | Ala | Val | Asp | Arg | Asp | Ser | Gly | Gln |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Asn | Ala | Trp | Leu | Ser | Tyr | Arg | Leu | Leu | Lys | Ala | Ser | Glu | Pro | Gly |
| | | | | 605 | | | | | 610 | | | | | 615 |
| Leu | Phe | Ser | Val | Gly | Leu | His | Thr | Gly | Glu | Val | Arg | Thr | Ala | Arg |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Ala | Leu | Leu | Asp | Arg | Asp | Ala | Leu | Lys | Gln | Ser | Leu | Val | Val | Ala |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Val | Gln | Asp | His | Gly | Gln | Pro | Pro | Leu | Ser | Ala | Thr | Val | Thr | Leu |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Thr | Val | Ala | Val | Ala | Asp | Ser | Ile | Pro | Gln | Val | Leu | Ala | Asp | Leu |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Gly | Ser | Leu | Glu | Ser | Pro | Ala | Asn | Ser | Glu | Thr | Ser | Asp | Leu | Thr |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Leu | Tyr | Leu | Val | Val | Ala | Val | Ala | Ala | Val | Ser | Cys | Val | Phe | Leu |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Ala | Phe | Val | Ile | Leu | Leu | Leu | Ala | Leu | Arg | Leu | Arg | Arg | Trp | His |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Lys | Ser | Arg | Leu | Leu | Gln | Ala | Ser | Gly | Gly | Gly | Leu | Thr | Gly | Ala |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Pro | Ala | Ser | His | Phe | Val | Gly | Val | Asp | Gly | Val | Gln | Ala | Phe | Leu |
| | | | | 740 | | | | | 745 | | | | | 750 |
| Gln | Thr | Tyr | Ser | His | Glu | Val | Ser | Leu | Thr | Thr | Asp | Ser | Arg | Lys |
| | | | | 755 | | | | | 760 | | | | | 765 |
| Ser | His | Leu | Ile | Phe | Pro | Gln | Pro | Asn | Tyr | Ala | Asp | Met | Leu | Val |
| | | | | 770 | | | | | 775 | | | | | 780 |
| Ser | Gln | Glu | Ser | Phe | Glu | Lys | Ser | Glu | Pro | Leu | Leu | Leu | Ser | Gly |
| | | | | 785 | | | | | 790 | | | | | 795 |
| Asp | Ser | Val | Phe | Ser | Lys | Asp | Ser | His | Gly | Leu | Ile | Glu | Val | Ser |
| | | | | 800 | | | | | 805 | | | | | 810 |
| Leu | Tyr | Gln | Ile | Phe | Phe | Leu | Phe | Phe | Phe | Asn | Cys | Ser | Val | Ser |
| | | | | 815 | | | | | 820 | | | | | 825 |
| Gln | Ala | Gly | Val | Gln | Arg | Tyr | Asp | His | Ser | Ser | Leu | Arg | Pro | Gln |
| | | | | 830 | | | | | 835 | | | | | 840 |
| Thr | Pro | Arg | Leu | Lys | Gln | Leu | Ser | His | Leu | Cys | Leu | Arg | Cys | Asn |
| | | | | 845 | | | | | 850 | | | | | 855 |
| Arg | Asp | Tyr | Arg | Cys | Lys | Pro | Pro | Thr | Val | Cys | Leu | Ser | Ile | Tyr |
| | | | | 860 | | | | | 865 | | | | | 870 |
| Leu | Ser | Ile | Tyr | Leu | Ser | Ile | Tyr | Leu | Ser | Ile | Tyr | Leu | Leu | Leu |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 875 | | 880 | | 885 |
| Ser Cys Thr Asp Gly Ser Leu Thr Pro Val Ile Pro Val Leu Trp | | | | | |
| | 890 | | 895 | | 900 |
| Glu Ala Glu Ala Gly Gly Ser Pro Glu Val Gly Ser Leu Arg Pro | | | | | |
| | 905 | | 910 | | 915 |

Ala

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 <213> Artificial Sequence

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 <223> Synthetic oligonucleotide probe

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<210> 392
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 392
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<210> 393
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 393
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<210> 394
 <211> 999
 <212> DNA
 <213> Homo sapiens

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accagcctg gccagaagtg caccgtctca ggctggggca ctgtcaccag 650
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atggtctgtg caggcagcag caaaggggct gacacgtgcc agggcgattc 800
tggaggcccc ctggtgtgtg atggtgcact ccagggcatc acatcctggg 850
gctcagaccc ctgtgggagg tccgacaaac ctggcgtcta taccaacatc 900
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<210> 395

<211> 260

<212> PRT

<213> Homo sapiens

<400> 395

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Pro | Arg | Pro | Arg | Ala | Ala | Lys | Thr | Trp | Met | Phe | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Leu | Gly | Gly | Ala | Trp | Ala | Gly | His | Ser | Arg | Ala | Gln | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Asp | Lys | Val | Leu | Gly | Gly | His | Glu | Cys | Gln | Pro | His | Ser | Gln | Pro |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Trp | Gln | Ala | Ala | Leu | Phe | Gln | Gly | Gln | Gln | Leu | Leu | Cys | Gly | Gly |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Val | Leu | Val | Gly | Gly | Asn | Trp | Val | Leu | Thr | Ala | Ala | His | Cys | Lys |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Lys | Pro | Lys | Tyr | Thr | Val | Arg | Leu | Gly | Asp | His | Ser | Leu | Gln | Asn |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Lys | Asp | Gly | Pro | Glu | Gln | Glu | Ile | Pro | Val | Val | Gln | Ser | Ile | Pro |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Pro | Cys | Tyr | Asn | Ser | Ser | Asp | Val | Glu | Asp | His | Asn | His | Asp |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Met | Leu | Leu | Gln | Leu | Arg | Asp | Gln | Ala | Ser | Leu | Gly | Ser | Lys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Val | Lys | Pro | Ile | Ser | Leu | Ala | Asp | His | Cys | Thr | Gln | Pro | Gly | Gln |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Lys | Cys | Thr | Val | Ser | Gly | Trp | Gly | Thr | Val | Thr | Ser | Pro | Arg | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Asn | Phe | Pro | Asp | Thr | Leu | Asn | Cys | Ala | Glu | Val | Lys | Ile | Phe | Pro |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gln | Lys | Lys | Cys | Glu | Asp | Ala | Tyr | Pro | Gly | Gln | Ile | Thr | Asp | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Met | Val | Cys | Ala | Gly | Ser | Ser | Lys | Gly | Ala | Asp | Thr | Cys | Gln | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Asp | Gly | Ala | Leu | Gln | Gly | Ile |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Thr | Ser | Trp | Gly | Ser | Asp | Pro | Cys | Gly | Arg | Ser | Asp | Lys | Pro | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Tyr | Thr | Asn | Ile | Cys | Arg | Tyr | Leu | Asp | Trp | Ile | Lys | Lys | Ile |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ile | Gly | Ser | Lys | Gly | | | | | | | | | | |
| | | | | 260 | | | | | | | | | | |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 396

cagcctacag aataaagatg gcc 24

<210> 397

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 397

ggtgcaatga tctgccaggc tgat 24

<210> 398

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 398

agaaatacct gtggttcagt ccatcccaaa cccctgctac aacagcag 48

<210> 399

<211> 2236

<212> DNA

<213> Homo sapiens

<400> 399

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gccccgccc gggcccgccg ccgcgccgc gccaggtga gcgctccgc 150
cgccgcgagg ccccgccccg gcccgcccc gcccgcccc ggccggcggg 200
ggaaccgggc ggattcctcg cgcgtcaaac cacctgatcc cataaaacat 250
tcactctccc ggcgcccgcc gctgcgagcg ccccgccagt ccgcgccgc 300
gccgcccctg cctgtgcgc cctgcgcgcc ctgcgcaccc gcggcccgag 350
cccagccaga gccgggggga gggagcgcg ccgagcctcg tcccgcgcc 400
gggcccgggc cgggcccgtg cggcgccgcc tggatgcgga cccggccgcg 450
gggagacggg cgcgcgcccc gaaacgactt tcagtccccg acgcgccccg 500
cccaaccct acgatgaaga gggcgctccg tggaggaggc cggctgctgg 550
catgggtgct gtggctgcag gcctggcagg tggcagcccc atgccaggt 600
gcctgcgtat gctacaatga gcccaagggt acgacaagct gccccagca 650
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<210> 400

<211> 473

<212> PRT

<213> Homo sapiens

<400> 400

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Arg | Ala | Ser | Ala | Gly | Gly | Ser | Arg | Leu | Leu | Ala | Trp | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Trp | Leu | Gln | Ala | Trp | Gln | Val | Ala | Ala | Pro | Cys | Pro | Gly | Ala |
| | | | 20 | | | | | 25 | | | | | | 30 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Val | Cys | Tyr | Asn | Glu | Pro | Lys | Val | Thr | Thr | Ser | Cys | Pro | Gln | 35 | 40 | 45 |
| Gln | Gly | Leu | Gln | Ala | Val | Pro | Val | Gly | Ile | Pro | Ala | Ala | Ser | Gln | 50 | 55 | 60 |
| Arg | Ile | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | His | Val | Pro | Ala | Ala | 65 | 70 | 75 |
| Ser | Phe | Arg | Ala | Cys | Arg | Asn | Leu | Thr | Ile | Leu | Trp | Leu | His | Ser | 80 | 85 | 90 |
| Asn | Val | Leu | Ala | Arg | Ile | Asp | Ala | Ala | Ala | Phe | Thr | Gly | Leu | Ala | 95 | 100 | 105 |
| Leu | Leu | Glu | Gln | Leu | Asp | Leu | Ser | Asp | Asn | Ala | Gln | Leu | Arg | Ser | 110 | 115 | 120 |
| Val | Asp | Pro | Ala | Thr | Phe | His | Gly | Leu | Gly | Arg | Leu | His | Thr | Leu | 125 | 130 | 135 |
| His | Leu | Asp | Arg | Cys | Gly | Leu | Gln | Glu | Leu | Gly | Pro | Gly | Leu | Phe | 140 | 145 | 150 |
| Arg | Gly | Leu | Ala | Ala | Leu | Gln | Tyr | Leu | Tyr | Leu | Gln | Asp | Asn | Ala | 155 | 160 | 165 |
| Leu | Gln | Ala | Leu | Pro | Asp | Asp | Thr | Phe | Arg | Asp | Leu | Gly | Asn | Leu | 170 | 175 | 180 |
| Thr | His | Leu | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | Ser | Val | Pro | Glu | 185 | 190 | 195 |
| Arg | Ala | Phe | Arg | Gly | Leu | His | Ser | Leu | Asp | Arg | Leu | Leu | Leu | His | 200 | 205 | 210 |
| Gln | Asn | Arg | Val | Ala | His | Val | His | Pro | His | Ala | Phe | Arg | Asp | Leu | 215 | 220 | 225 |
| Gly | Arg | Leu | Met | Thr | Leu | Tyr | Leu | Phe | Ala | Asn | Asn | Leu | Ser | Ala | 230 | 235 | 240 |
| Leu | Pro | Thr | Glu | Ala | Leu | Ala | Pro | Leu | Arg | Ala | Leu | Gln | Tyr | Leu | 245 | 250 | 255 |
| Arg | Leu | Asn | Asp | Asn | Pro | Trp | Val | Cys | Asp | Cys | Arg | Ala | Arg | Pro | 260 | 265 | 270 |
| Leu | Trp | Ala | Trp | Leu | Gln | Lys | Phe | Arg | Gly | Ser | Ser | Ser | Glu | Val | 275 | 280 | 285 |
| Pro | Cys | Ser | Leu | Pro | Gln | Arg | Leu | Ala | Gly | Arg | Asp | Leu | Lys | Arg | 290 | 295 | 300 |
| Leu | Ala | Ala | Asn | Asp | Leu | Gln | Gly | Cys | Ala | Val | Ala | Thr | Gly | Pro | 305 | 310 | 315 |
| Tyr | His | Pro | Ile | Trp | Thr | Gly | Arg | Ala | Thr | Asp | Glu | Glu | Pro | Leu | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 320 | 325 | 330 |
| Gly Leu Pro Lys Cys Cys Gln Pro Asp | Ala Ala Asp Lys Ala Ser | |
| 335 | 340 | 345 |
| Val Leu Glu Pro Gly Arg Pro Ala Ser | Ala Gly Asn Ala Leu Lys | |
| 350 | 355 | 360 |
| Gly Arg Val Pro Pro Gly Asp Ser Pro | Pro Gly Asn Gly Ser Gly | |
| 365 | 370 | 375 |
| Pro Arg His Ile Asn Asp Ser Pro Phe | Gly Thr Leu Pro Gly Ser | |
| 380 | 385 | 390 |
| Ala Glu Pro Pro Leu Thr Ala Val Arg | Pro Glu Gly Ser Glu Pro | |
| 395 | 400 | 405 |
| Pro Gly Phe Pro Thr Ser Gly Pro Arg | Arg Arg Pro Gly Cys Ser | |
| 410 | 415 | 420 |
| Arg Lys Asn Arg Thr Arg Ser His Cys | Arg Leu Gly Gln Ala Gly | |
| 425 | 430 | 435 |
| Ser Gly Gly Gly Gly Thr Gly Asp Ser | Glu Gly Ser Gly Ala Leu | |
| 440 | 445 | 450 |
| Pro Ser Leu Thr Cys Ser Leu Thr Pro | Leu Gly Leu Ala Leu Val | |
| 455 | 460 | 465 |
| Leu Trp Thr Val Leu Gly Pro Cys | | |
| 470 | | |

<210> 401
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 401
 tggctgccct gcagtacctc tacc 24

<210> 402
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 402
 ccctgcaggt cattggcagc tagg 24

<210> 403
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 403
aggcactgcc tgatgacacc ttccgcgacc tgggcaacct cacac 45

<210> 404
<211> 2738
<212> DNA
<213> Homo sapiens

<400> 404
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ggagaggact actcactggc atatttctga ggtatctgta gaataaccac 100
agcctcagat actggggact ttacagtccc acagaaccgt cctcccagga 150
agctgaatcc agcaagaaca atggaggcca gcgggaagct catttgcaga 200
caaaggcaag tccttttttc ctttctcctt ttgggcttat ctctggcggg 250
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cctttgtcac caatttagca aaggacctgg gtctggagca gagggaattc 350
tcaggcgggg gggttagggg tgtttccaga gggaacaaac tacatttgca 400
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aaacgaccac tctccagtat ttctggacaa acaaagtgtg gtgaaagtat 600
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tgttttaag tgaacattta cctttattcc tggttctt 2738

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<211> 798
<212> PRT
<213> Homo sapiens

<400> 405
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Pro Arg Ser Tyr Ser Val Val Glu Glu Thr Glu Gly Ser Ser Phe
35 40 45
Val Thr Asn Leu Ala Lys Asp Leu Gly Leu Glu Gln Arg Glu Phe
50 55 60
Ser Arg Arg Gly Val Arg Val Val Ser Arg Gly Asn Lys Leu His
65 70 75
Leu Gln Leu Asn Gln Glu Thr Ala Asp Leu Leu Leu Asn Glu Lys
80 85 90
Leu Asp Arg Glu Asp Leu Cys Gly His Thr Glu Pro Cys Val Leu
95 100 105
Arg Phe Gln Val Leu Leu Glu Ser Pro Phe Glu Phe Phe Gln Ala
110 115 120
Glu Leu Gln Val Ile Asp Ile Asn Asp His Ser Pro Val Phe Leu
125 130 135
Asp Lys Gln Met Leu Val Lys Val Ser Glu Ser Ser Pro Pro Gly
140 145 150
Thr Thr Phe Pro Leu Lys Asn Ala Glu Asp Leu Asp Val Gly Gln
155 160 165
Asn Asn Ile Glu Asn Tyr Ile Ile Ser Pro Asn Ser Tyr Phe Arg
170 175 180
Val Leu Thr Arg Lys Arg Ser Asp Gly Arg Lys Tyr Pro Glu Leu
185 190 195
Val Leu Asp Lys Ala Leu Asp Arg Glu Glu Glu Ala Glu Leu Arg
200 205 210
Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Pro Arg Ser Gly
215 220 225
Thr Ala Gln Val Tyr Ile Glu Val Leu Asp Val Asn Asp Asn Ala

| 230 | 235 | 240 |
|--|-----|-----|
| Pro Glu Phe Glu Gln Pro Phe Tyr Arg Val Gln Ile Ser Glu Asp 245 | 250 | 255 |
| Ser Pro Val Gly Phe Leu Val Val Lys Val Ser Ala Thr Asp Val 260 | 265 | 270 |
| Asp Thr Gly Val Asn Gly Glu Ile Ser Tyr Ser Leu Phe Gln Ala 275 | 280 | 285 |
| Ser Glu Glu Ile Gly Lys Thr Phe Lys Ile Asn Pro Leu Thr Gly 290 | 295 | 300 |
| Glu Ile Glu Leu Lys Lys Gln Leu Asp Phe Glu Lys Leu Gln Ser 305 | 310 | 315 |
| Tyr Glu Val Asn Ile Glu Ala Arg Asp Ala Gly Thr Phe Ser Gly 320 | 325 | 330 |
| Lys Cys Thr Val Leu Ile Gln Val Ile Asp Val Asn Asp His Ala 335 | 340 | 345 |
| Pro Glu Val Thr Met Ser Ala Phe Thr Ser Pro Ile Pro Glu Asn 350 | 355 | 360 |
| Ala Pro Glu Thr Val Val Ala Leu Phe Ser Val Ser Asp Leu Asp 365 | 370 | 375 |
| Ser Gly Glu Asn Gly Lys Ile Ser Cys Ser Ile Gln Glu Asp Leu 380 | 385 | 390 |
| Pro Phe Leu Leu Lys Ser Ala Glu Asn Phe Tyr Thr Leu Leu Thr 395 | 400 | 405 |
| Glu Arg Pro Leu Asp Arg Glu Ser Arg Ala Glu Tyr Asn Ile Thr 410 | 415 | 420 |
| Ile Thr Val Thr Asp Leu Gly Thr Pro Met Leu Ile Thr Gln Leu 425 | 430 | 435 |
| Asn Met Thr Val Leu Ile Ala Asp Val Asn Asp Asn Ala Pro Ala 440 | 445 | 450 |
| Phe Thr Gln Thr Ser Tyr Thr Leu Phe Val Arg Glu Asn Asn Ser 455 | 460 | 465 |
| Pro Ala Leu His Ile Arg Ser Val Ser Ala Thr Asp Arg Asp Ser 470 | 475 | 480 |
| Gly Thr Asn Ala Gln Val Thr Tyr Ser Leu Leu Pro Pro Gln Asp 485 | 490 | 495 |
| Pro His Leu Pro Leu Thr Ser Leu Val Ser Ile Asn Ala Asp Asn 500 | 505 | 510 |
| Gly His Leu Phe Ala Leu Arg Ser Leu Asp Tyr Glu Ala Leu Gln 515 | 520 | 525 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Phe | Gln | Phe | Arg | Val | Gly | Ala | Ser | Asp | His | Gly | Ser | Pro | Ala | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Leu | Ser | Ser | Glu | Ala | Leu | Val | Arg | Val | Val | Val | Leu | Asp | Ala | Asn | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Asp | Asn | Ser | Pro | Phe | Val | Leu | Tyr | Pro | Leu | Gln | Asn | Gly | Ser | Ala | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Pro | Cys | Thr | Glu | Leu | Val | Pro | Arg | Ala | Ala | Glu | Pro | Gly | Tyr | Leu | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Val | Thr | Lys | Val | Val | Ala | Val | Asp | Gly | Asp | Ser | Gly | Gln | Asn | Ala | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Trp | Leu | Ser | Tyr | Gln | Leu | Leu | Lys | Ala | Thr | Glu | Leu | Gly | Leu | Phe | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Gly | Val | Trp | Ala | His | Asn | Gly | Glu | Val | Arg | Thr | Ala | Arg | Leu | Leu | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Ser | Glu | Arg | Asp | Ala | Ala | Lys | His | Arg | Leu | Val | Val | Leu | Val | Lys | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Asp | Asn | Gly | Glu | Pro | Pro | Arg | Ser | Ala | Thr | Ala | Thr | Leu | His | Val | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Leu | Leu | Val | Asp | Gly | Phe | Ser | Gln | Pro | Tyr | Leu | Pro | Leu | Pro | Glu | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Ala | Ala | Pro | Thr | Gln | Ala | Gln | Ala | Asp | Leu | Leu | Thr | Val | Tyr | Leu | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Val | Val | Ala | Leu | Ala | Ser | Val | Ser | Ser | Leu | Phe | Leu | Phe | Ser | Val | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Leu | Leu | Phe | Val | Ala | Val | Arg | Leu | Cys | Arg | Arg | Ser | Arg | Ala | Ala | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Ser | Val | Gly | Arg | Cys | Leu | Val | Pro | Glu | Gly | Pro | Leu | Pro | Gly | His | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Leu | Val | Asp | Met | Ser | Gly | Thr | Arg | Thr | Leu | Ser | Gln | Ser | Tyr | Gln | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Tyr | Glu | Val | Cys | Leu | Ala | Gly | Gly | Ser | Gly | Thr | Asn | Glu | Phe | Lys | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Phe | Leu | Lys | Pro | Ile | Ile | Pro | Asn | Phe | Pro | Pro | Gln | Cys | Pro | Gly | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Lys | Glu | Ile | Gln | Gly | Asn | Ser | Thr | Phe | Pro | Asn | Asn | Phe | Gly | Phe | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
| Asn | Ile | Gln | | | | | | | | | | | | | |

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<220>
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<210> 407
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<220>
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<400> 407
agcgttgtca ttgacatcgg cg 22

<210> 408
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
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<400> 408
ttagttgctc cattcaggag gatctaccct tcctcctgaa atccgcggaa 50

<210> 409
<211> 1379
<212> DNA
<213> Homo sapiens

<400> 409
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gcgtagccgt gcgccgattg cctctcggcc tgggcaatgg tcccggctgc 100
cggctcgacga ccgccccgcg tcatgcggct cctcggctgg tggcaagtat 150
tgctgtgggt gctgggactt cccgtccgcg gcgtggaggt tgcagaggaa 200
agtggtcgct tatggtcaga ggagcagcct gctcaccctc tccaggtggg 250
ggctgtgtac ctgggtgagg aggagctcct gcatgaccgc atgggccagg 300
acagggcagc agaagaggcc aatgcggtgc tggggctgga cacccaaggc 350
gatcacatgg tgatgctgtc tgtgattcct ggggaagctg aggacaaagt 400
gagttcagag cctagcggcg tcacctgtgg tgctggagga gcggaggact 450
caaggtgcaa cgtccgagag agccttttct ctctggatgg cgctggagca 500

cacttccctg acagagaaga ggagtattac acagagccag aagtggcgga 550
atctgacgca gccccgacag aggactccaa taacactgaa agtctgaaat 600
cccccagggt gaactgtgag gagagaaaca ttacaggatt agaaaatttc 650
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caggtttggc accgtagctg ttccctaataat tttattattt caaggagcta 900
aaccaatggc cagatttaat catacagatc gaacactgga aacactgaaa 950
atcttcattt ttaatcagac aggtatagaa gccagaaga atgtggtggt 1000
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agtgacgtgt tgacttgaaa cttcaggcag attaaaagaa tcatttggtg 1300
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caataagcaa atgcaaaaat attcaatag 1379

<210> 410
<211> 360
<212> PRT
<213> Homo sapiens

<400> 410
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20 25 30
Arg Gly Val Glu Val Ala Glu Glu Ser Gly Arg Leu Trp Ser Glu
35 40 45
Glu Gln Pro Ala His Pro Leu Gln Val Gly Ala Val Tyr Leu Gly
50 55 60
Glu Glu Glu Leu Leu His Asp Pro Met Gly Gln Asp Arg Ala Ala
65 70 75
Glu Glu Ala Asn Ala Val Leu Gly Leu Asp Thr Gln Gly Asp His

| 80 | 85 | 90 |
|---|-----|-----|
| Met Val Met Leu Ser Val Ile Pro Gly Glu Ala Glu Asp Lys Val | | |
| 95 | 100 | 105 |
| Ser Ser Glu Pro Ser Gly Val Thr Cys Gly Ala Gly Gly Ala Glu | | |
| 110 | 115 | 120 |
| Asp Ser Arg Cys Asn Val Arg Glu Ser Leu Phe Ser Leu Asp Gly | | |
| 125 | 130 | 135 |
| Ala Gly Ala His Phe Pro Asp Arg Glu Glu Glu Tyr Tyr Thr Glu | | |
| 140 | 145 | 150 |
| Pro Glu Val Ala Glu Ser Asp Ala Ala Pro Thr Glu Asp Ser Asn | | |
| 155 | 160 | 165 |
| Asn Thr Glu Ser Leu Lys Ser Pro Lys Val Asn Cys Glu Glu Arg | | |
| 170 | 175 | 180 |
| Asn Ile Thr Gly Leu Glu Asn Phe Thr Leu Lys Ile Leu Asn Met | | |
| 185 | 190 | 195 |
| Ser Gln Asp Leu Met Asp Phe Leu Asn Pro Asn Gly Ser Asp Cys | | |
| 200 | 205 | 210 |
| Thr Leu Val Leu Phe Tyr Thr Pro Trp Cys Arg Phe Ser Ala Ser | | |
| 215 | 220 | 225 |
| Leu Ala Pro His Phe Asn Ser Leu Pro Arg Ala Phe Pro Ala Leu | | |
| 230 | 235 | 240 |
| His Phe Leu Ala Leu Asp Ala Ser Gln His Ser Ser Leu Ser Thr | | |
| 245 | 250 | 255 |
| Arg Phe Gly Thr Val Ala Val Pro Asn Ile Leu Leu Phe Gln Gly | | |
| 260 | 265 | 270 |
| Ala Lys Pro Met Ala Arg Phe Asn His Thr Asp Arg Thr Leu Glu | | |
| 275 | 280 | 285 |
| Thr Leu Lys Ile Phe Ile Phe Asn Gln Thr Gly Ile Glu Ala Lys | | |
| 290 | 295 | 300 |
| Lys Asn Val Val Val Thr Gln Ala Asp Gln Ile Gly Pro Leu Pro | | |
| 305 | 310 | 315 |
| Ser Thr Leu Ile Lys Ser Val Asp Trp Leu Leu Val Phe Ser Leu | | |
| 320 | 325 | 330 |
| Phe Phe Leu Ile Ser Phe Ile Met Tyr Ala Thr Ile Arg Thr Glu | | |
| 335 | 340 | 345 |
| Ser Ile Arg Trp Leu Ile Pro Gly Gln Glu Gln Glu His Val Glu | | |
| 350 | 355 | 360 |

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<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

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<210> 412
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 412
ccacatgttc ctgctcttgt cctgg 25

<210> 413
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 413
cggtagtgac tgtactctag tctgtttta cccccgtgg tgccg 45

<210> 414
<211> 1196
<212> DNA
<213> Homo sapiens

<400> 414
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gcgcagcaat tgcaagccca tcccgggtcaa cctgcagctg tgccacggca 200
tcgaatacca gaacatgcgg ctgcccacc tgctgggcca cgagaccatg 250
aaggaggtgc tggagcaggc cggcgcttgg atcccgtgg tcatgaagca 300
gtgccacccg gacaccaaga agttcctgtg ctgcctcttc gccccgtct 350
gcctcgatga cctagacgag accatccagc catgccactc gctctgcgtg 400
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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Trp | Pro | Asp | Met | Leu | Glu | Cys | Asp | Arg | Phe | Pro | Gln | Asp | Asn | Asp | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Leu | Cys | Ile | Pro | Leu | Ala | Ser | Ser | Asp | His | Leu | Leu | Pro | Ala | Thr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Glu | Glu | Ala | Pro | Lys | Val | Cys | Glu | Ala | Cys | Lys | Asn | Lys | Asn | Asp | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Asp | Asp | Asn | Asp | Ile | Met | Glu | Thr | Leu | Cys | Lys | Asn | Asp | Phe | Ala | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Lys | Ile | Lys | Val | Lys | Glu | Ile | Thr | Tyr | Ile | Asn | Arg | Asp | Thr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Ile | Ile | Leu | Glu | Thr | Lys | Ser | Lys | Thr | Ile | Tyr | Lys | Leu | Asn | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gly | Val | Ser | Glu | Arg | Asp | Leu | Lys | Lys | Ser | Val | Leu | Trp | Leu | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Asp | Ser | Leu | Gln | Cys | Thr | Cys | Glu | Glu | Met | Asn | Asp | Ile | Asn | Ala | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Pro | Tyr | Leu | Val | Met | Gly | Gln | Lys | Gln | Gly | Gly | Glu | Leu | Val | Ile | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Thr | Ser | Val | Lys | Arg | Trp | Gln | Lys | Gly | Gln | Arg | Glu | Phe | Lys | Arg | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ile | Ser | Arg | Ser | Ile | Arg | Lys | Leu | Gln | Cys | | | | | | |
| | | | | 290 | | | | | 295 | | | | | | |

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<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 416

cctggctcgc tgctgctgct c 21

<210> 417

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 417

cctcacaggt gcactgcaag ctgtc 25

<210> 418

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 418

ctcttcctct ttggccagcc cgacttctcc tacaagcgca gaattgc 47

<210> 419

<211> 1830

<212> DNA

<213> Homo sapiens

<400> 419

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cgctgggtgt tctgtctgc gatcagcctg ctcaactgct ccaacgccac 150
gctgtggctc agctttgcac ctgtggctga cgtcattgct gaggacttgg 200
tctgtccat ggagcagatc aactggctgt cactggtcta cctcgtggta 250
tccaccccat ttggcgtggc ggccatctgg atcctggact ccgtcgggct 300
ccgtgcggcg accatcctgg gtgcgtggct gaactttgcc gggagtgtgc 350
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 cccggctggg tctcactcct ccttctcctc cccgtgggtg atcacgtagc 1700
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<210> 420

<211> 560

<212> PRT

<213> Homo sapiens

<400> 420

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Pro | Thr | Glu | Ala | Glu | Thr | Gly | Leu | Ala | Glu | Pro | Arg |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Leu | Cys | Ala | Gln | Arg | Gly | His | Arg | Thr | Tyr | Ala | Arg | Arg | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Phe | Leu | Leu | Ala | Ile | Ser | Leu | Leu | Asn | Cys | Ser | Asn | Ala | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Trp | Leu | Ser | Phe | Ala | Pro | Val | Ala | Asp | Val | Ile | Ala | Glu | Asp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Val | Leu | Ser | Met | Glu | Gln | Ile | Asn | Trp | Leu | Ser | Leu | Val | Tyr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Val | Val | Ser | Thr | Pro | Phe | Gly | Val | Ala | Ala | Ile | Trp | Ile | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asp | Ser | Val | Gly | Leu | Arg | Ala | Ala | Thr | Ile | Leu | Gly | Ala | Trp | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Asn | Phe | Ala | Gly | Ser | Val | Leu | Arg | Met | Val | Pro | Cys | Met | Val | Val |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Thr | Gln | Asn | Pro 125 | Phe | Ala | Phe | Leu | Met 130 | Gly | Gly | Gln | Ser | Leu 135 |
| Cys | Ala | Leu | Ala | Gln 140 | Ser | Leu | Val | Ile | Phe 145 | Ser | Pro | Ala | Lys | Leu 150 |
| Ala | Ala | Leu | Trp | Phe 155 | Pro | Glu | His | Gln | Arg 160 | Ala | Thr | Ala | Asn | Met 165 |
| Leu | Ala | Thr | Met | Ser 170 | Asn | Pro | Leu | Gly | Val 175 | Leu | Val | Ala | Asn | Val 180 |
| Leu | Ser | Pro | Val | Leu 185 | Val | Lys | Lys | Gly | Glu 190 | Asp | Ile | Pro | Leu | Met 195 |
| Leu | Gly | Val | Tyr | Thr 200 | Ile | Pro | Ala | Gly | Val 205 | Val | Cys | Leu | Leu | Ser 210 |
| Thr | Ile | Cys | Leu | Trp 215 | Glu | Ser | Val | Pro | Pro 220 | Thr | Pro | Pro | Ser | Ala 225 |
| Gly | Ala | Ala | Ser | Ser 230 | Thr | Ser | Glu | Lys | Phe 235 | Leu | Asp | Gly | Leu | Lys 240 |
| Leu | Gln | Leu | Met | Trp 245 | Asn | Lys | Ala | Tyr | Val 250 | Ile | Leu | Ala | Val | Cys 255 |
| Leu | Gly | Gly | Met | Ile 260 | Gly | Ile | Ser | Ala | Ser 265 | Phe | Ser | Ala | Leu | Leu 270 |
| Glu | Gln | Ile | Leu | Cys 275 | Ala | Ser | Gly | His | Ser 280 | Ser | Gly | Phe | Ser | Gly 285 |
| Leu | Cys | Gly | Ala | Leu 290 | Phe | Ile | Thr | Phe | Gly 295 | Ile | Leu | Gly | Ala | Leu 300 |
| Ala | Leu | Gly | Pro | Tyr 305 | Val | Asp | Arg | Thr | Lys 310 | His | Phe | Thr | Glu | Ala 315 |
| Thr | Lys | Ile | Gly | Leu 320 | Cys | Leu | Phe | Ser | Leu 325 | Ala | Cys | Val | Pro | Phe 330 |
| Ala | Leu | Val | Ser | Gln 335 | Leu | Gln | Gly | Gln | Thr 340 | Leu | Ala | Leu | Ala | Ala 345 |
| Thr | Cys | Ser | Leu | Leu 350 | Gly | Leu | Phe | Gly | Phe 355 | Ser | Val | Gly | Pro | Val 360 |
| Ala | Met | Glu | Leu | Ala 365 | Val | Glu | Cys | Ser | Phe 370 | Pro | Val | Gly | Glu | Gly 375 |
| Ala | Ala | Thr | Gly | Met 380 | Ile | Phe | Val | Leu | Gly 385 | Gln | Ala | Glu | Gly | Ile 390 |
| Leu | Ile | Met | Leu | Ala 395 | Met | Thr | Ala | Leu | Thr 400 | Val | Arg | Arg | Ser | Glu 405 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ser | Leu | Ser | Thr | Cys | Gln | Gln | Gly | Glu | Asp | Pro | Leu | Asp | Trp |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Thr | Val | Ser | Leu | Leu | Leu | Met | Ala | Gly | Leu | Cys | Thr | Phe | Phe | Ser |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Cys | Ile | Leu | Ala | Val | Phe | Phe | His | Thr | Pro | Tyr | Arg | Arg | Leu | Gln |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Ala | Glu | Ser | Gly | Glu | Pro | Pro | Ser | Thr | Arg | Asn | Ala | Val | Gly | Gly |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Ala | Asp | Ser | Gly | Pro | Gly | Val | Asp | Arg | Gly | Gly | Ala | Gly | Arg | Ala |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Gly | Val | Leu | Gly | Pro | Ser | Thr | Ala | Thr | Pro | Glu | Cys | Thr | Ala | Arg |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Gly | Ala | Ser | Leu | Glu | Asp | Pro | Arg | Gly | Pro | Gly | Ser | Pro | His | Pro |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Ala | Cys | His | Arg | Ala | Thr | Pro | Arg | Ala | Gln | Gly | Pro | Ala | Ala | Thr |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Asp | Ala | Pro | Ser | Arg | Pro | Gly | Arg | Leu | Ala | Gly | Arg | Val | Gln | Ala |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Ser | Arg | Phe | Ile | Asp | Pro | Ala | Gly | Ser | His | Ser | Ser | Phe | Ser | Ser |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Pro | Trp | Val | Ile | Thr | | | | | | | | | | |
| | | | | 560 | | | | | | | | | | |

<210> 421
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 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 421
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 <210> 422
 <211> 25
 <212> DNA
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 422
 cgggtcaata aacctggacg cttgg 25

 <210> 423
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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 423

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<210> 424

<211> 4313

<212> DNA

<213> Homo sapiens

<400> 424

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tggccttgcc ttggggctct gcttgtttca taatcatcta actatgggac 200
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<210> 425

<211> 1184

<212> PRT

<213> Homo sapiens

<400> 425

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Met | Gln | Leu | Leu | Gln | Leu | Leu | Leu | Gly | Leu | Leu | Gly | Pro | Gly | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Tyr | Leu | Phe | Leu | Leu | Gly | Asp | Cys | Gln | Glu | Val | Thr | Thr | Leu | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Thr | Val | Lys | Tyr | Gln | Val | Ser | Glu | Glu | Val | Pro | Ser | Gly | Thr | Val | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Ile | Gly | Lys | Leu | Ser | Gln | Glu | Leu | Gly | Arg | Glu | Glu | Arg | Arg | Arg | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Gln | Ala | Gly | Ala | Ala | Phe | Gln | Val | Leu | Gln | Leu | Pro | Gln | Ala | Leu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Pro | Ile | Gln | Val | Asp | Ser | Glu | Glu | Gly | Leu | Leu | Ser | Thr | Gly | Arg | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Arg | Leu | Asp | Arg | Glu | Gln | Leu | Cys | Arg | Gln | Trp | Asp | Pro | Cys | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Val | Ser | Phe | Asp | Val | Leu | Ala | Thr | Gly | Asp | Leu | Ala | Leu | Ile | His | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Val | Glu | Ile | Gln | Val | Leu | Asp | Ile | Asn | Asp | His | Gln | Pro | Arg | Phe | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Pro | Lys | Gly | Glu | Gln | Glu | Leu | Glu | Ile | Ser | Glu | Ser | Ala | Ser | Leu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Arg | Thr | Arg | Ile | Pro | Leu | Asp | Arg | Ala | Leu | Asp | Pro | Asp | Thr | Gly | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Pro | Asn | Thr | Leu | His | Thr | Tyr | Thr | Leu | Ser | Pro | Ser | Glu | His | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ala | Leu | Asp | Val | Ile | Val | Gly | Pro | Asp | Glu | Thr | Lys | His | Ala | Glu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |

| | | | |
|---|-----|-----|-----|
| Leu Ile Val Val Lys Glu Leu Asp Arg Glu Ile His Ser Phe Phe | 200 | 205 | 210 |
| Asp Leu Val Leu Thr Ala Tyr Asp Asn Gly Asn Pro Pro Lys Ser | 215 | 220 | 225 |
| Gly Thr Ser Leu Val Lys Val Asn Val Leu Asp Ser Asn Asp Asn | 230 | 235 | 240 |
| Ser Pro Ala Phe Ala Glu Ser Ser Leu Ala Leu Glu Ile Gln Glu | 245 | 250 | 255 |
| Asp Ala Ala Pro Gly Thr Leu Leu Ile Lys Leu Thr Ala Thr Asp | 260 | 265 | 270 |
| Pro Asp Gln Gly Pro Asn Gly Glu Val Glu Phe Phe Leu Ser Lys | 275 | 280 | 285 |
| His Met Pro Pro Glu Val Leu Asp Thr Phe Ser Ile Asp Ala Lys | 290 | 295 | 300 |
| Thr Gly Gln Val Ile Leu Arg Arg Pro Leu Asp Tyr Glu Lys Asn | 305 | 310 | 315 |
| Pro Ala Tyr Glu Val Asp Val Gln Ala Arg Asp Leu Gly Pro Asn | 320 | 325 | 330 |
| Pro Ile Pro Ala His Cys Lys Val Leu Ile Lys Val Leu Asp Val | 335 | 340 | 345 |
| Asn Asp Asn Ile Pro Ser Ile His Val Thr Trp Ala Ser Gln Pro | 350 | 355 | 360 |
| Ser Leu Val Ser Glu Ala Leu Pro Lys Asp Ser Phe Ile Ala Leu | 365 | 370 | 375 |
| Val Met Ala Asp Asp Leu Asp Ser Gly His Asn Gly Leu Val His | 380 | 385 | 390 |
| Cys Trp Leu Ser Gln Glu Leu Gly His Phe Arg Leu Lys Arg Thr | 395 | 400 | 405 |
| Asn Gly Asn Thr Tyr Met Leu Leu Thr Asn Ala Thr Leu Asp Arg | 410 | 415 | 420 |
| Glu Gln Trp Pro Lys Tyr Thr Leu Thr Leu Leu Ala Gln Asp Gln | 425 | 430 | 435 |
| Gly Leu Gln Pro Leu Ser Ala Lys Lys Gln Leu Ser Ile Gln Ile | 440 | 445 | 450 |
| Ser Asp Ile Asn Asp Asn Ala Pro Val Phe Glu Lys Ser Arg Tyr | 455 | 460 | 465 |
| Glu Val Ser Thr Arg Glu Asn Asn Leu Pro Ser Leu His Leu Ile | 470 | 475 | 480 |
| Thr Ile Lys Ala His Asp Ala Asp Leu Gly Ile Asn Gly Lys Val | | | |

| 485 | | | | | | | | | | 490 | | | | | 495 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Ser | Tyr | Arg | Ile | Gln | Asp | Ser | Pro | Val | Ala | His | Leu | Val | Ala | Ile | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Asp | Ser | Asn | Thr | Gly | Glu | Val | Thr | Ala | Gln | Arg | Ser | Leu | Asn | Tyr | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Glu | Glu | Met | Ala | Gly | Phe | Glu | Phe | Gln | Val | Ile | Ala | Glu | Asp | Ser | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| Gly | Gln | Pro | Met | Leu | Ala | Ser | Ser | Val | Ser | Val | Trp | Val | Ser | Leu | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| Leu | Asp | Ala | Asn | Asp | Asn | Ala | Pro | Glu | Val | Val | Gln | Pro | Val | Leu | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | |
| Ser | Asp | Gly | Lys | Ala | Ser | Leu | Ser | Val | Leu | Val | Asn | Ala | Ser | Thr | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | |
| Gly | His | Leu | Leu | Val | Pro | Ile | Glu | Thr | Pro | Asn | Gly | Leu | Gly | Pro | | | | | |
| | | | | 590 | | | | | 595 | | | | | 600 | | | | | |
| Ala | Gly | Thr | Asp | Thr | Pro | Pro | Leu | Ala | Thr | His | Ser | Ser | Arg | Pro | | | | | |
| | | | | 605 | | | | | 610 | | | | | 615 | | | | | |
| Phe | Leu | Leu | Thr | Thr | Ile | Val | Ala | Arg | Asp | Ala | Asp | Ser | Gly | Ala | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Asn | Gly | Glu | Pro | Leu | Tyr | Ser | Ile | Arg | Asn | Gly | Asn | Glu | Ala | His | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Leu | Phe | Ile | Leu | Asn | Pro | His | Thr | Gly | Gln | Leu | Phe | Val | Asn | Val | | | | | |
| | | | | 650 | | | | | 655 | | | | | 660 | | | | | |
| Thr | Asn | Ala | Ser | Ser | Leu | Ile | Gly | Ser | Glu | Trp | Glu | Leu | Glu | Ile | | | | | |
| | | | | 665 | | | | | 670 | | | | | 675 | | | | | |
| Val | Val | Glu | Asp | Gln | Gly | Ser | Pro | Pro | Leu | Gln | Thr | Arg | Ala | Leu | | | | | |
| | | | | 680 | | | | | 685 | | | | | 690 | | | | | |
| Leu | Arg | Val | Met | Phe | Val | Thr | Ser | Val | Asp | His | Leu | Arg | Asp | Ser | | | | | |
| | | | | 695 | | | | | 700 | | | | | 705 | | | | | |
| Ala | Arg | Lys | Pro | Gly | Ala | Leu | Ser | Met | Ser | Met | Leu | Thr | Val | Ile | | | | | |
| | | | | 710 | | | | | 715 | | | | | 720 | | | | | |
| Cys | Leu | Ala | Val | Leu | Leu | Gly | Ile | Phe | Gly | Leu | Ile | Leu | Ala | Leu | | | | | |
| | | | | 725 | | | | | 730 | | | | | 735 | | | | | |
| Phe | Met | Ser | Ile | Cys | Arg | Thr | Glu | Lys | Lys | Asp | Asn | Arg | Ala | Tyr | | | | | |
| | | | | 740 | | | | | 745 | | | | | 750 | | | | | |
| Asn | Cys | Arg | Glu | Ala | Glu | Ser | Thr | Tyr | Arg | Gln | Gln | Pro | Lys | Arg | | | | | |
| | | | | 755 | | | | | 760 | | | | | 765 | | | | | |
| Pro | Gln | Lys | His | Ile | Gln | Lys | Ala | Asp | Ile | His | Leu | Val | Pro | Val | | | | | |
| | | | | 770 | | | | | 775 | | | | | 780 | | | | | |

| | | |
|---|------|------|
| 1070 | 1075 | 1080 |
| Thr Glu Glu Pro Arg Thr Phe Gln Thr Phe Gly Lys Ala Glu Ala | | |
| 1085 | 1090 | 1095 |
| Pro Glu Leu Ser Pro Thr Gly Thr Arg Leu Ala Ser Thr Phe Val | | |
| 1100 | 1105 | 1110 |
| Ser Glu Met Ser Ser Leu Leu Glu Met Leu Leu Glu Gln Arg Ser | | |
| 1115 | 1120 | 1125 |
| Ser Met Pro Val Glu Ala Ala Ser Glu Ala Leu Arg Arg Leu Ser | | |
| 1130 | 1135 | 1140 |
| Val Cys Gly Arg Thr Leu Ser Leu Asp Leu Ala Thr Ser Ala Ala | | |
| 1145 | 1150 | 1155 |
| Ser Gly Met Lys Val Gln Gly Asp Pro Gly Gly Lys Thr Gly Thr | | |
| 1160 | 1165 | 1170 |
| Glu Gly Lys Ser Arg Gly Ser Ser Ser Ser Ser Arg Cys Leu | | |
| 1175 | 1180 | |

<210> 426
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 426
 gtaagcacat gcctccagag gtgc 24

<210> 427
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 427
 gtgacgtgga tgcttgggat gttg 24

<210> 428
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 428
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<210> 429
 <211> 2037

<212> DNA
<213> Homo sapiens

<400> 429

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ggcctcgggg agtgggaagt ggaggcagga gccttcctta cacttcgcca 150
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gatacgtcag tatgtgtac aggtgatctt ctccgtgacg tttgcatttt 300
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ggatattcta gccctggaac ggcgactgct gcaaaccatg gatatgatca 750
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ccgccatggc ccaacttggt tattgcagct tataatg 2037

<210> 430

<211> 455

<212> PRT

<213> Homo sapiens

<400> 430

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Phe | Leu | Ile | Asp | Ser | Ser | Ile | Met | Ile | Thr | Ser | Gln | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Phe | Phe | Gly | Phe | Gly | Trp | Leu | Phe | Phe | Met | Arg | Gln | Leu | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Lys | Asp | Tyr | Glu | Ile | Arg | Gln | Tyr | Val | Val | Gln | Val | Ile | Phe | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Val | Thr | Phe | Ala | Phe | Ser | Cys | Thr | Met | Phe | Glu | Leu | Ile | Ile | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Glu | Ile | Leu | Gly | Val | Leu | Asn | Ser | Ser | Ser | Arg | Tyr | Phe | His | Trp |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Met | Asn | Leu | Cys | Val | Ile | Leu | Leu | Ile | Leu | Val | Phe | Met | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Pro | Phe | Tyr | Ile | Gly | Tyr | Phe | Ile | Val | Ser | Asn | Ile | Arg | Leu | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| His | Lys | Gln | Arg | Leu | Leu | Phe | Ser | Cys | Leu | Leu | Trp | Leu | Thr | Phe |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | |
|---|-----|-----|-----|
| Met Tyr Phe Phe Trp Lys Leu Gly Asp Pro Phe Pro Ile Leu Ser | 125 | 130 | 135 |
| Pro Lys His Gly Ile Leu Ser Ile Glu Gln Leu Ile Ser Arg Val | 140 | 145 | 150 |
| Gly Val Ile Gly Val Thr Leu Met Ala Leu Leu Ser Gly Phe Gly | 155 | 160 | 165 |
| Ala Val Asn Cys Pro Tyr Thr Tyr Met Ser Tyr Phe Leu Arg Asn | 170 | 175 | 180 |
| Val Thr Asp Thr Asp Ile Leu Ala Leu Glu Arg Arg Leu Leu Gln | 185 | 190 | 195 |
| Thr Met Asp Met Ile Ile Ser Lys Lys Lys Arg Met Ala Met Ala | 200 | 205 | 210 |
| Arg Arg Thr Met Phe Gln Lys Gly Glu Val His Asn Lys Pro Ser | 215 | 220 | 225 |
| Gly Phe Trp Gly Met Ile Lys Ser Val Thr Thr Ser Ala Ser Gly | 230 | 235 | 240 |
| Ser Glu Asn Leu Thr Leu Ile Gln Gln Glu Val Asp Ala Leu Glu | 245 | 250 | 255 |
| Glu Leu Ser Arg Gln Leu Phe Leu Glu Thr Ala Asp Leu Tyr Ala | 260 | 265 | 270 |
| Thr Lys Glu Arg Ile Glu Tyr Ser Lys Thr Phe Lys Gly Lys Tyr | 275 | 280 | 285 |
| Phe Asn Phe Leu Gly Tyr Phe Phe Ser Ile Tyr Cys Val Trp Lys | 290 | 295 | 300 |
| Ile Phe Met Ala Thr Ile Asn Ile Val Phe Asp Arg Val Gly Lys | 305 | 310 | 315 |
| Thr Asp Pro Val Thr Arg Gly Ile Glu Ile Thr Val Asn Tyr Leu | 320 | 325 | 330 |
| Gly Ile Gln Phe Asp Val Lys Phe Trp Ser Gln His Ile Ser Phe | 335 | 340 | 345 |
| Ile Leu Val Gly Ile Ile Ile Val Thr Ser Ile Arg Gly Leu Leu | 350 | 355 | 360 |
| Ile Thr Leu Thr Lys Phe Phe Tyr Ala Ile Ser Ser Ser Lys Ser | 365 | 370 | 375 |
| Ser Asn Val Ile Val Leu Leu Leu Ala Gln Ile Met Gly Met Tyr | 380 | 385 | 390 |
| Phe Val Ser Ser Val Leu Leu Ile Arg Met Ser Met Pro Leu Glu | 395 | 400 | 405 |
| Tyr Arg Thr Ile Ile Thr Glu Val Leu Gly Glu Leu Gln Phe Asn | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 410 | 415 | 420 |
| Phe Tyr His Arg Trp Phe Asp Val Ile | Phe Leu Val Ser Ala Leu | |
| 425 | 430 | 435 |
| Ser Ser Ile Leu Phe Leu Tyr Leu Ala | His Lys Gln Ala Pro Glu | |
| 440 | 445 | 450 |
| Lys Gln Met Ala Pro | | |
| 455 | | |

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 <211> 407
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 78, 81, 113, 157, 224, 297
 <223> unknown base

<400> 431
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 tggcttttct tcngcgccaa tgtttaaaga ctatgagata cgtcagtatg 150
 ttgtacnggt gatcttctcc gtgacgtttg ccatttcttg caccatgttt 200
 gagctcatca tctttgaaat cttnngagta ttgaatagca gctcccgtta 250
 ttttcaactgg aaaatgaacc tgtgtgtaat tctgctgac ctggttntca 300
 tgggtgccttt ttacattggc tattttattg tgagcaatat ccgactactg 350
 cataaacaac gactgctttt ttctgtctc ttatggctga cctttatgta 400
 tttccag 407

<210> 432
 <211> 457
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 31, 66, 81-82, 84, 122, 184, 187, 232, 241, 400, 424, 427, 434
 <223> unknown base

<400> 432
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| Val | Asp | Ile | Asp | Gln | Gly | Ala | Asp | Met | Gln | Lys | Glu | Ser | Lys | Glu | | | | | |
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| Asn | Gln | Trp | Leu | Gly | Val | Ser | Val | Arg | Ser | Gln | Gly | Pro | Gly | Gly | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Lys | Ile | Val | Thr | Cys | Ala | His | Arg | Tyr | Glu | Ala | Arg | Gln | Arg | Val | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Asp | Gln | Ile | Leu | Glu | Thr | Arg | Asp | Met | Ile | Gly | Arg | Cys | Phe | Val | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Leu | Ser | Gln | Asp | Leu | Ala | Ile | Arg | Asp | Glu | Leu | Asp | Gly | Gly | Glu | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Trp | Lys | Phe | Cys | Glu | Gly | Arg | Pro | Gln | Gly | His | Glu | Gln | Phe | Gly | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Phe | Cys | Gln | Gln | Gly | Thr | Ala | Ala | Ala | Phe | Ser | Pro | Asp | Ser | His | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Tyr | Leu | Leu | Phe | Gly | Ala | Pro | Gly | Thr | Tyr | Asn | Trp | Lys | Gly | Thr | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Ala | Arg | Val | Glu | Leu | Cys | Ala | Gln | Gly | Ser | Ala | Asp | Leu | Ala | His | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Leu | Asp | Asp | Gly | Pro | Tyr | Glu | Ala | Gly | Gly | Glu | Lys | Glu | Gln | Asp | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Pro | Arg | Leu | Ile | Pro | Val | Pro | Ala | Asn | Ser | Tyr | Phe | Gly | Phe | Ser | | | | | |
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| Ile | Asp | Ser | Gly | Lys | Gly | Leu | Val | Arg | Ala | Glu | Glu | Leu | Ser | Phe | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Val | Ala | Gly | Ala | Pro | Arg | Ala | Asn | His | Lys | Gly | Ala | Val | Val | Ile | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Leu | Arg | Lys | Asp | Ser | Ala | Ser | Arg | Leu | Val | Pro | Glu | Val | Met | Leu | | | | | |
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| Val | Tyr | Leu | Asn | Gln | Gly | Gly | His | Trp | Ala | Gly | Ile | Ser | Pro | Leu | | | | | |
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| 665 | | | | | | | | | | 670 | | | | | 675 | | | |
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| Leu | Glu | Leu | Met | Val | Thr | Asn | Leu | Pro | | Ser | Asp | Pro | Ala | Gln | Pro | | | |
| | | | | 695 | | | | | | 700 | | | | | 705 | | | |
| Gln | Ala | Asp | Gly | Asp | Asp | Ala | His | Glu | | Ala | Gln | Leu | Leu | Val | Met | | | |
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| Leu | Pro | Asp | Ser | Leu | His | Tyr | Ser | Gly | | Val | Arg | Ala | Leu | Asp | Pro | | | |
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| Ala | Glu | Lys | Pro | Leu | Cys | Leu | Ser | Asn | | Glu | Asn | Ala | Ser | His | Val | | | |
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| Glu | Cys | Glu | Leu | Gly | Asn | Pro | Met | Lys | | Arg | Gly | Ala | Gln | Val | Thr | | | |
| | | | | 755 | | | | | | 760 | | | | | 765 | | | |
| Phe | Tyr | Leu | Ile | Leu | Ser | Thr | Ser | Gly | | Ile | Ser | Ile | Glu | Thr | Thr | | | |
| | | | | 770 | | | | | | 775 | | | | | 780 | | | |
| Glu | Leu | Glu | Val | Glu | Leu | Leu | Leu | Ala | | Thr | Ile | Ser | Glu | Gln | Glu | | | |
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| Leu | His | Pro | Val | Ser | Ala | Arg | Ala | Arg | | Val | Phe | Ile | Glu | Leu | Pro | | | |
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| Leu | Ser | Ile | Ala | Gly | Met | Ala | Ile | Pro | | Gln | Gln | Leu | Phe | Phe | Ser | | | |
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| Gly | Ser | Lys | Val | Lys | Tyr | Glu | Val | Thr | | Val | Ser | Asn | Gln | Gly | Gln | | | |
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| Ser | Leu | Arg | Thr | Leu | Gly | Ser | Ala | Phe | | Leu | Asn | Ile | Met | Trp | Pro | | | |
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| Glu | Leu | Glu | Gly | Gly | Gln | Gly | Pro | Gly | | Gln | Lys | Gly | Leu | Cys | Ser | | | |
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| Pro | Arg | Pro | Asn | Ile | Leu | His | Leu | Asp | | Val | Asp | Ser | Arg | Asp | Arg | | | |
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| Lys | Lys | Lys | Asn | Ile | Thr | Leu | Asp | Cys | | Ala | Arg | Gly | Thr | Ala | Asn | | | |
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Thr Thr Ile Ser Gln Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys

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| Gly | Lys | Pro | Phe | Asp | Gln | Ala | Leu | Asp | Pro | Ala | Lys | Asp | Pro | Cys | | | | | |
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| Leu | Lys | Met | Lys | Cys | Ser | Arg | His | Lys | Val | Cys | Ile | Ala | Gln | Asp | | | | | |
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| Ser | Gln | Thr | Ala | Val | Cys | Ile | Ser | His | Arg | Arg | Leu | Thr | His | Arg | | | | | |
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| Met | Lys | Glu | Ala | Gly | Val | Asp | His | Arg | Gln | Trp | Arg | Gly | Pro | Ile | | | | | |
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| Leu | Ser | Thr | Cys | Lys | Gln | Cys | Pro | Val | Val | Tyr | Pro | Ser | Pro | Val | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Cys | Gly | Ser | Asp | Gly | His | Thr | Tyr | Ser | Phe | Gln | Cys | Lys | Leu | Glu | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Tyr | Gln | Ala | Cys | Val | Leu | Gly | Lys | Gln | Ile | Ser | Val | Lys | Cys | Glu | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Gly | His | Cys | Pro | Cys | Pro | Ser | Asp | Lys | Pro | Thr | Ser | Thr | Ser | Arg | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Asn | Val | Lys | Arg | Ala | Cys | Ser | Asp | Leu | Glu | Phe | Arg | Glu | Val | Ala | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Asn | Arg | Leu | Arg | Asp | Trp | Phe | Lys | Ala | Leu | His | Glu | Ser | Gly | Ser | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Gln | Asn | Lys | Lys | Thr | Lys | Thr | Leu | Leu | Arg | Pro | Glu | Arg | Ser | Arg | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Phe | Asp | Thr | Ser | Ile | Leu | Pro | Ile | Cys | Lys | Asp | Ser | Leu | Gly | Trp | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Met | Phe | Asn | Arg | Leu | Asp | Thr | Asn | Tyr | Asp | Leu | Leu | Leu | Asp | Gln | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ser | Glu | Leu | Arg | Ser | Ile | Tyr | Leu | Asp | Lys | Asn | Glu | Gln | Cys | Thr | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Lys | Ala | Phe | Phe | Asn | Ser | Cys | Asp | Thr | Tyr | Lys | Asp | Ser | Leu | Ile | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Ser | Asn | Asn | Glu | Trp | Cys | Tyr | Cys | Phe | Gln | Arg | Gln | Gln | Asp | Pro | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Pro | Cys | Gln | Thr | Glu | Leu | Ser | Asn | Ile | Gln | Lys | Arg | Gln | Gly | Val | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Lys | Lys | Leu | Leu | Gly | Gln | Tyr | Ile | Pro | Leu | Cys | Asp | Glu | Asp | Gly | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Tyr | Lys | Pro | Thr | Gln | Cys | His | Gly | Ser | Val | Gly | Gln | Cys | Trp |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Cys | Val | Asp | Arg | Tyr | Gly | Asn | Glu | Val | Met | Gly | Ser | Arg | Ile | Asn |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Gly | Val | Ala | Asp | Cys | Ala | Ile | Asp | Phe | Glu | Ile | Ser | Gly | Asp | Phe |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Ala | Ser | Gly | Asp | Phe | His | Glu | Trp | Thr | Asp | Asp | Glu | Asp | Asp | Glu |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Asp | Asp | Ile | Met | Asn | Asp | Glu | Asp | Glu | Ile | Glu | Asp | Asp | Asp | Glu |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Asp | Glu | Gly | Asp | Asp | Asp | Asp | Gly | Gly | Asp | Asp | His | Asp | Val | Tyr |
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Ile

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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 444
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 444
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<210> 445
 <211> 48
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 445
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<210> 446
 <211> 3617
 <212> DNA
 <213> Homo sapiens

<400> 446

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gctctgcctc cggtgctgct gcctggggcg gccggcttca caccttccct 200
cgatagcgac ttcaccttta cccttccgc cggccagaag gagtgttct 250
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tctgagaagg tgattttctt tgaattaatc ctggataata tgggagaaca 500
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aaatctttag actacaaaag cccaactttt ctctatttac atatgcatct 1300
ctcctataat gtaaatagaa taatagcttt gaaatacaat taggtttttg 1350
agatttttat aaccaaat acattcagtgt aacatattag cagaaagcat 1400
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 <211> 859
 <212> DNA
 <213> Homo sapiens

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 gccctgcca gtgtgtcctg gatgtgctt tctgcctca ttctcctgtg 150
 tcaggttcaa ggtgaagaaa ccagaagga actgccctct ccacggatca 200
 gctgtcccaa aggctccaag gcctatggct cccctgcta tgccttggtt 250
 ttgtcaccaa aatcctggat ggatgcagat ctggcttgcc agaagcggcc 300
 ctctggaaaa ctggtgtctg tgctcagtgg ggctgagga tcttctgtgt 350
 cctccctggt gaggagcatt agtaacagct actcatacat ctggattggg 400
 ctccatgacc ccacacaggg ctctgagcct gatggagatg gatgggagtg 450
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 aaaaaaaaaa 859

<210> 452
 <211> 175
 <212> PRT
 <213> Homo sapiens

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 20 25 30
 Lys Glu Leu Pro Ser Pro Arg Ile Ser Cys Pro Lys Gly Ser Lys
 35 40 45
 Ala Tyr Gly Ser Pro Cys Tyr Ala Leu Phe Leu Ser Pro Lys Ser

| | | | | | |
|---|-----|--|-----|--|-----|
| | 50 | | 55 | | 60 |
| Trp Met Asp Ala Asp Leu Ala Cys Gln Lys Arg Pro Ser Gly Lys | 65 | | 70 | | 75 |
| Leu Val Ser Val Leu Ser Gly Ala Glu Gly Ser Phe Val Ser Ser | 80 | | 85 | | 90 |
| Leu Val Arg Ser Ile Ser Asn Ser Tyr Ser Tyr Ile Trp Ile Gly | 95 | | 100 | | 105 |
| Leu His Asp Pro Thr Gln Gly Ser Glu Pro Asp Gly Asp Gly Trp | 110 | | 115 | | 120 |
| Glu Trp Ser Ser Thr Asp Val Met Asn Tyr Phe Ala Trp Glu Lys | 125 | | 130 | | 135 |
| Asn Pro Ser Thr Ile Leu Asn Pro Gly His Cys Gly Ser Leu Ser | 140 | | 145 | | 150 |
| Arg Ser Thr Gly Phe Leu Lys Trp Lys Asp Tyr Asn Cys Asp Ala | 155 | | 160 | | 165 |
| Lys Leu Pro Tyr Val Cys Lys Phe Lys Asp | 170 | | 175 | | |

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 <212> DNA
 <213> Homo sapiens

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 ggcgctcctg gcgctggtgc tggctgcctg cggagagctg gcgcgggccc 150
 tgcgctgcta cgtctgtccg gagccacag gagtgtcga ctgtgtcacc 200
 atcgccacct gcaccaccaa cgaaaccatg tgcaagacca cactctactc 250
 ccgggagata gtgtaccctt tccaggggga ctccacgggtg accaagtcct 300
 gtgccagcaa gtgtaagccc tcggatgtgg atggcatcgg ccagaccctg 350
 cccgtgtcct gctgcaatac tgagctgtgc aatgtagacg gggcgccgcg 400
 tctgaacagc ctccactgcg gggccctcac gtcctccca ctcttgagcc 450
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 cgaatgcctt gaagaagtgc cccctgcacc aggaaaaaaa aaaaaaaaaa 550

<210> 454
 <211> 125
 <212> PRT
 <213> Homo sapiens

<400> 454

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Pro Thr Gly Val Ser Asp Cys Val Thr Ile Ala Thr Cys Thr Thr
35 40 45
Asn Glu Thr Met Cys Lys Thr Thr Leu Tyr Ser Arg Glu Ile Val
50 55 60
Tyr Pro Phe Gln Gly Asp Ser Thr Val Thr Lys Ser Cys Ala Ser
65 70 75
Lys Cys Lys Pro Ser Asp Val Asp Gly Ile Gly Gln Thr Leu Pro
80 85 90
Val Ser Cys Cys Asn Thr Glu Leu Cys Asn Val Asp Gly Ala Pro
95 100 105
Ala Leu Asn Ser Leu His Cys Gly Ala Leu Thr Leu Leu Pro Leu
110 115 120
Leu Ser Leu Arg Leu
125

<210> 455

<211> 1518

<212> DNA

<213> Homo sapiens

<400> 455

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gcgcagcggg agctaccgg gtctttgtcg cgatggtagc ggcggctctc 200
ggcgccacc ctctgctggg agtgagcgcc accttgaact cggttctcaa 250
ttccaacgct atcaagaacc tgccccacc gctgggcggc gctgcggggc 300
accaggtc tgcaagtcgc gccgcgccg gaatcctgta cccgggcggg 350
aataagtacc agaccattga caactaccag ccgtaccgt gcgcagagga 400
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 atgtaacatg aaaatactag cttattttct gaaatgtact atcttaatgc 1450
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<210> 456

<211> 266

<212> PRT

<213> Homo sapiens

<400> 456

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Ala | Leu | Gly | Ala | Ala | Gly | Ala | Thr | Arg | Val | Phe | Val | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Met | Val | Ala | Ala | Ala | Leu | Gly | Gly | His | Pro | Leu | Leu | Gly | Val | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Thr | Leu | Asn | Ser | Val | Leu | Asn | Ser | Asn | Ala | Ile | Lys | Asn | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Pro | Pro | Leu | Gly | Gly | Ala | Ala | Gly | His | Pro | Gly | Ser | Ala | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ser | Ala | Ala | Pro | Gly | Ile | Leu | Tyr | Pro | Gly | Gly | Asn | Lys | Tyr | Gln |
| | | | | 65 | | | | | 70 | | | | | 75 |

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 aataagtacc agaccattga caattaccag ccgtaccctg gcgcagagga 400
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<210> 458

<211> 4040

<212> DNA

<213> Homo sapiens

<400> 458

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 ttctctcttg cagcgggtgc ttgggctcgg ccaggcgggg tccgcggcca 150
 gggtttgagg atgggggagt agctacagga agcgaccccg cgatggcaag 200
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 <211> 747
 <212> PRT
 <213> Homo sapiens

<400> 459
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 Gly Thr Asp Gln Asp Phe Tyr Ser Leu Leu Gly Val Ser Lys Thr
 35 40 45
 Ala Ser Ser Arg Glu Ile Arg Gln Ala Phe Lys Lys Leu Ala Leu
 50 55 60
 Lys Leu His Pro Asp Lys Asn Pro Asn Asn Pro Asn Ala His Gly
 65 70 75
 Asp Phe Leu Lys Ile Asn Arg Ala Tyr Glu Val Leu Lys Asp Glu
 80 85 90
 Asp Leu Arg Lys Lys Tyr Asp Lys Tyr Gly Glu Lys Gly Leu Glu
 95 100 105
 Asp Asn Gln Gly Gly Gln Tyr Glu Ser Trp Asn Tyr Tyr Arg Tyr
 110 115 120
 Asp Phe Gly Ile Tyr Asp Asp Asp Pro Glu Ile Ile Thr Leu Glu
 125 130 135
 Arg Arg Glu Phe Asp Ala Ala Val Asn Ser Gly Glu Leu Trp Phe
 140 145 150
 Val Asn Phe Tyr Ser Pro Gly Cys Ser His Cys His Asp Leu Ala
 155 160 165
 Pro Thr Trp Arg Asp Phe Ala Lys Glu Val Asp Gly Leu Leu Arg
 170 175 180
 Ile Gly Ala Val Asn Cys Gly Asp Asp Arg Met Leu Cys Arg Met
 185 190 195
 Lys Gly Val Asn Ser Tyr Pro Ser Leu Phe Ile Phe Arg Ser Gly

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Glu | Gln | Ile | Leu | Glu | Phe | Ile | Glu | Asp | Leu | Met | Asn | Pro | 500 | 505 | 510 |
| Ser | Val | Val | Ser | Leu | Thr | Pro | Thr | Thr | Phe | Asn | Glu | Leu | Val | Thr | 515 | 520 | 525 |
| Gln | Arg | Lys | His | Asn | Glu | Val | Trp | Met | Val | Asp | Phe | Tyr | Ser | Pro | 530 | 535 | 540 |
| Trp | Cys | His | Pro | Cys | Gln | Val | Leu | Met | Pro | Glu | Trp | Lys | Arg | Met | 545 | 550 | 555 |
| Ala | Arg | Thr | Leu | Thr | Gly | Leu | Ile | Asn | Val | Gly | Ser | Ile | Asp | Cys | 560 | 565 | 570 |
| Gln | Gln | Tyr | His | Ser | Phe | Cys | Ala | Gln | Glu | Asn | Val | Gln | Arg | Tyr | 575 | 580 | 585 |
| Pro | Glu | Ile | Arg | Phe | Phe | Pro | Pro | Lys | Ser | Asn | Lys | Ala | Tyr | Gln | 590 | 595 | 600 |
| Tyr | His | Ser | Tyr | Asn | Gly | Trp | Asn | Arg | Asp | Ala | Tyr | Ser | Leu | Arg | 605 | 610 | 615 |
| Ile | Trp | Gly | Leu | Gly | Phe | Leu | Pro | Gln | Val | Ser | Thr | Asp | Leu | Thr | 620 | 625 | 630 |
| Pro | Gln | Thr | Phe | Ser | Glu | Lys | Val | Leu | Gln | Gly | Lys | Asn | His | Trp | 635 | 640 | 645 |
| Val | Ile | Asp | Phe | Tyr | Ala | Pro | Trp | Cys | Gly | Pro | Cys | Gln | Asn | Phe | 650 | 655 | 660 |
| Ala | Pro | Glu | Phe | Glu | Leu | Leu | Ala | Arg | Met | Ile | Lys | Gly | Lys | Val | 665 | 670 | 675 |
| Lys | Ala | Gly | Lys | Val | Asp | Cys | Gln | Ala | Tyr | Ala | Gln | Thr | Cys | Gln | 680 | 685 | 690 |
| Lys | Ala | Gly | Ile | Arg | Ala | Tyr | Pro | Thr | Val | Lys | Phe | Tyr | Phe | Tyr | 695 | 700 | 705 |
| Glu | Arg | Ala | Lys | Arg | Asn | Phe | Gln | Glu | Glu | Gln | Ile | Asn | Thr | Arg | 710 | 715 | 720 |
| Asp | Ala | Lys | Ala | Ile | Ala | Ala | Leu | Ile | Ser | Glu | Lys | Leu | Glu | Thr | 725 | 730 | 735 |
| Leu | Arg | Asn | Gln | Gly | Lys | Arg | Asn | Lys | Asp | Glu | Leu | | | | 740 | 745 | |

<210> 460

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 460
actccccagg ctgttcacac tgcc 24

<210> 461
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 461
gatcagccag ccaataccag cagc 24

<210> 462
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 462
gtggtgatga tagaatgctt tgccgaatga aaggagtcaa cagctatccc 50

<210> 463
<211> 1818
<212> DNA
<213> Homo sapiens

<400> 463
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ggacagagca aagccatgaa catcatccta gaaatccttc tgcttctgat 100
caccatcatc tactcctact tggagtcggt ggtgaagttt ttcattcctc 150
agaggagaaa atctgtggct ggggagattg ttctcattac tggagctggg 200
catggaatag gcaggcagac tacttatgaa ttgcaaaac gacagagcat 250
attggttctg tgggatatta ataagcgcgg tgtggaggaa actgcagctg 300
agtgccgaaa actaggcgtc actgcgcatg cgtatgtggt agactgcagc 350
aacagagaag agatctatcg ctctctaaat caggatgaaga aagaagtggg 400
tgatgtaaca atcgtggtga ataatgctgg gacagtatat ccagccgatc 450
ttctcagcac caaggatgaa gagattacca agacatttga ggtcaacatc 500
ctaggacatt tttggatcac aaaagcactt cttccatcga tgatggagag 550
aaatcatggc cacatcgtca cagtggcttc agtgtgcggc cacgaaggga 600
ttccttacct catcccatat tgttccagca aatttgccgc tgttggtttt 650
cacagaggtc tgacatcaga acttcaggcc ttgggaaaaa ctggtatcaa 700

aacctcatgt ctctgcccag tttttgtgaa tactgggttc accaaaaatc 750
 caagcacaag attatggcct gtattggaga cagatgaagt cgtaagaagt 800
 ctgatagatg gaatacttac caataagaaa atgatttttg ttccatcgta 850
 tatcaatatc tttctgagac tacagaagtt tcttcctgaa cgcgcctcag 900
 cgattttaaa tcgtatgcag aatattcaat ttgaagcagt ggttggccac 950
 aaaatcaaaa tgaaatgaat aaataagctc cagccagaga tgtatgcatg 1000
 ataatgatat gaatagtttc gaatcaatgc tgcaaagctt tatttcacat 1050
 tttttcagtc ctgataatat taaaaacatt ggtttggcac tagcagcagt 1100
 caaacgaaca agattaatta cctgtcttcc tgtttctcaa gaatatttac 1150
 gtagtttttc ataggtctgt ttttctttc atgcctctta aaaacttctg 1200
 tgottacata aacatactta aaagggtttc tttaagatat tttatttttc 1250
 catttaaagg tggacaaaag ctacctcct aaaagtaaat acaaagagaa 1300
 cttattttaca caggggaaggt ttaagactgt tcaagtagca ttccaatctg 1350
 tagccatgcc acagaatatc aacaagaaca cagaatgagt gcacagctaa 1400
 gagatcaagt ttcagcaggc agctttatct caacctggac atattttaag 1450
 attcagcatt tgaaagattt ccctagcctc ttcctttttc attagcccaa 1500
 aacggtgcaa ctctattctg gactttatta cttgattctg tcttctgtat 1550
 aactctgaag tccacaaaaa gtggaccctc tatatttcct ccctttttat 1600
 agtcttataa gatacattat gaaaggtgac cgactctatt ttaaattctca 1650
 gaattttaag ttctagcccc atgataacct ttttctttgt aatttatgct 1700
 ttcatatatc cttgggtccca gagatgttta gacaatttta ggctcaaaaa 1750
 ttaaagctaa cacaggaaaa ggaactgtac tggctattac ataagaaaca 1800
 atggacccaa gagaagaa 1818

<210> 464

<211> 300

<212> PRT

<213> Homo sapiens

<400> 464

| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Ile | Ile | Leu | Glu | Ile | Leu | Leu | Leu | Ile | Thr | Ile | Ile |
| 1 | | | | 5 | | | | 10 | | | | 15 | |
| Tyr | Ser | Tyr | Leu | Glu | Ser | Leu | Val | Lys | Phe | Phe | Ile | Pro | Gln |
| | | | 20 | | | | | | 25 | | | | 30 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Arg | Lys | Ser | Val | Ala | Gly | Glu | Ile | Val | Leu | Ile | Thr | Gly | Ala | Gly | | 35 | 40 | 45 |
| His | Gly | Ile | Gly | Arg | Gln | Thr | Thr | Tyr | Glu | Phe | Ala | Lys | Arg | Gln | | 50 | 55 | 60 |
| Ser | Ile | Leu | Val | Leu | Trp | Asp | Ile | Asn | Lys | Arg | Gly | Val | Glu | Glu | | 65 | 70 | 75 |
| Thr | Ala | Ala | Glu | Cys | Arg | Lys | Leu | Gly | Val | Thr | Ala | His | Ala | Tyr | | 80 | 85 | 90 |
| Val | Val | Asp | Cys | Ser | Asn | Arg | Glu | Glu | Ile | Tyr | Arg | Ser | Leu | Asn | | 95 | 100 | 105 |
| Gln | Val | Lys | Lys | Glu | Val | Gly | Asp | Val | Thr | Ile | Val | Val | Asn | Asn | | 110 | 115 | 120 |
| Ala | Gly | Thr | Val | Tyr | Pro | Ala | Asp | Leu | Leu | Ser | Thr | Lys | Asp | Glu | | 125 | 130 | 135 |
| Glu | Ile | Thr | Lys | Thr | Phe | Glu | Val | Asn | Ile | Leu | Gly | His | Phe | Trp | | 140 | 145 | 150 |
| Ile | Thr | Lys | Ala | Leu | Leu | Pro | Ser | Met | Met | Glu | Arg | Asn | His | Gly | | 155 | 160 | 165 |
| His | Ile | Val | Thr | Val | Ala | Ser | Val | Cys | Gly | His | Glu | Gly | Ile | Pro | | 170 | 175 | 180 |
| Tyr | Leu | Ile | Pro | Tyr | Cys | Ser | Ser | Lys | Phe | Ala | Ala | Val | Gly | Phe | | 185 | 190 | 195 |
| His | Arg | Gly | Leu | Thr | Ser | Glu | Leu | Gln | Ala | Leu | Gly | Lys | Thr | Gly | | 200 | 205 | 210 |
| Ile | Lys | Thr | Ser | Cys | Leu | Cys | Pro | Val | Phe | Val | Asn | Thr | Gly | Phe | | 215 | 220 | 225 |
| Thr | Lys | Asn | Pro | Ser | Thr | Arg | Leu | Trp | Pro | Val | Leu | Glu | Thr | Asp | | 230 | 235 | 240 |
| Glu | Val | Val | Arg | Ser | Leu | Ile | Asp | Gly | Ile | Leu | Thr | Asn | Lys | Lys | | 245 | 250 | 255 |
| Met | Ile | Phe | Val | Pro | Ser | Tyr | Ile | Asn | Ile | Phe | Leu | Arg | Leu | Gln | | 260 | 265 | 270 |
| Lys | Phe | Leu | Pro | Glu | Arg | Ala | Ser | Ala | Ile | Leu | Asn | Arg | Met | Gln | | 275 | 280 | 285 |
| Asn | Ile | Gln | Phe | Glu | Ala | Val | Val | Gly | His | Lys | Ile | Lys | Met | Lys | | 290 | 295 | 300 |

<210> 465
 <211> 1547
 <212> DNA
 <213> Homo sapiens

<400> 465

cggcggcggc tgcgggcgcg aggtgagggg cgcgaggtga ggggcgcgag 50
gttcccagca ggatgccccg gctctgcagg aagctgaagt gagaggcccc 100
gagagggccc agcccgcccc gggcaggatg accaaggccc ggctgttccg 150
gctgtggctg gtgctggggt cgggtgttcat gatcctgctg atcatcgtgt 200
actgggacag cgcaggcgcc gcgcacttct acttgacac gtccttctct 250
aggccgcaca cggggccgcc gctgcccacg cccgggcccg acagggacag 300
ggagctcacg gccgaactcc atgtcgacga gtttctggac aagtttctca 350
gtgctggcgt gaagcagagc gaccttccca gaaaggagac ggagcagccg 400
cctgcgccgg ggagcatgga ggagagcgtg agaggctacg actggtcccc 450
gcgcgacgcc cggcgcagcc cagaccaggg ccggcagcag gcggagcggg 500
ggagcgtgct gcggggcttc tgcgccaaact ccagcctggc cttccccacc 550
aaggagcgcg cattcgacga catccccaac tcggagctga gccacctgat 600
cgtggacgac cggcacgggg ccatctactg ctacgtgcc aaggtggcct 650
gcaccaactg gaagcgcgtg atgatcgtgc tgagcgggaag cctgctgcac 700
cgcggtgcgc cctaccgcga cccgctgcgc atcccgcgcg agcacgtgca 750
caacgccagc gcgcacctga cttcaacaa gttctggcgc cgctacggga 800
agctctcccg ccacctcatg aaggtcaagc tcaagaagta caccaagttc 850
ctcttcgtgc gcgaccctt cgtgcgcctg atctccgct tccgcagcaa 900
gttcgagctg gagaacgagg agttctaccg caagttcgcc gtgcccatgc 950
tgcggtgta cgccaaccac accagcctgc ccgcctcggc gcgcgaggcc 1000
ttccgcgctg gcctcaaggt gtccttcgoc aacttcatcc agtacctgct 1050
ggaccgcac acggagaagc tggcgccctt caacgagcac tggcggcagg 1100
tgtaccgct ctgccaccg tgccagatcg actacgactt cgtggggaag 1150
ctggagactc tggacgagga cgcgcgcag ctgctgcagc tactccaggt 1200
ggaccggcag ctccgcttcc ccccgagcta ccggaacagg accgccagca 1250
gctgggagga ggactgggtc gccaaagatcc ccctggcctg gaggcagcag 1300
ctgtataaac tctacgaggc cgactttgtt ctcttcggct accccaagcc 1350
cgaaaacctc ctccgagact gaaagctttc gcgttgcttt ttctcgcgtg 1400
cctggaacct gacgcacgcg cactccagtt tttttatgac ctacgatttt 1450

gcaatctggg cttcttggtc actccactgc ctctatccat tgagtactgt 1500

atcgatattg ttttttaaga ttaatatatt tcaggtatatt aatacga 1547

<210> 466

<211> 414

<212> PRT

<213> Homo sapiens

<400> 466

Met Thr Lys Ala Arg Leu Phe Arg Leu Trp Leu Val Leu Gly Ser
1 5 10 15

Val Phe Met Ile Leu Leu Ile Ile Val Tyr Trp Asp Ser Ala Gly
20 25 30

Ala Ala His Phe Tyr Leu His Thr Ser Phe Ser Arg Pro His Thr
35 40 45

Gly Pro Pro Leu Pro Thr Pro Gly Pro Asp Arg Asp Arg Glu Leu
50 55 60

Thr Ala Asp Ser Asp Val Asp Glu Phe Leu Asp Lys Phe Leu Ser
65 70 75

Ala Gly Val Lys Gln Ser Asp Leu Pro Arg Lys Glu Thr Glu Gln
80 85 90

Pro Pro Ala Pro Gly Ser Met Glu Glu Ser Val Arg Gly Tyr Asp
95 100 105

Trp Ser Pro Arg Asp Ala Arg Arg Ser Pro Asp Gln Gly Arg Gln
110 115 120

Gln Ala Glu Arg Arg Ser Val Leu Arg Gly Phe Cys Ala Asn Ser
125 130 135

Ser Leu Ala Phe Pro Thr Lys Glu Arg Ala Phe Asp Asp Ile Pro
140 145 150

Asn Ser Glu Leu Ser His Leu Ile Val Asp Asp Arg His Gly Ala
155 160 165

Ile Tyr Cys Tyr Val Pro Lys Val Ala Cys Thr Asn Trp Lys Arg
170 175 180

Val Met Ile Val Leu Ser Gly Ser Leu Leu His Arg Gly Ala Pro
185 190 195

Tyr Arg Asp Pro Leu Arg Ile Pro Arg Glu His Val His Asn Ala
200 205 210

Ser Ala His Leu Thr Phe Asn Lys Phe Trp Arg Arg Tyr Gly Lys
215 220 225

Leu Ser Arg His Leu Met Lys Val Lys Leu Lys Lys Tyr Thr Lys
230 235 240

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Phe | Leu | Phe | Val | Arg | Asp | Pro | Phe | Val | Arg | Leu | Ile | Ser | Ala | Phe | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Arg | Ser | Lys | Phe | Glu | Leu | Glu | Asn | Glu | Glu | Phe | Tyr | Arg | Lys | Phe | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ala | Val | Pro | Met | Leu | Arg | Leu | Tyr | Ala | Asn | His | Thr | Ser | Leu | Pro | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ala | Ser | Ala | Arg | Glu | Ala | Phe | Arg | Ala | Gly | Leu | Lys | Val | Ser | Phe | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ala | Asn | Phe | Ile | Gln | Tyr | Leu | Leu | Asp | Pro | His | Thr | Glu | Lys | Leu | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Ala | Pro | Phe | Asn | Glu | His | Trp | Arg | Gln | Val | Tyr | Arg | Leu | Cys | His | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Pro | Cys | Gln | Ile | Asp | Tyr | Asp | Phe | Val | Gly | Lys | Leu | Glu | Thr | Leu | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Asp | Glu | Asp | Ala | Ala | Gln | Leu | Leu | Gln | Leu | Leu | Gln | Val | Asp | Arg | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Gln | Leu | Arg | Phe | Pro | Pro | Ser | Tyr | Arg | Asn | Arg | Thr | Ala | Ser | Ser | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Trp | Glu | Glu | Asp | Trp | Phe | Ala | Lys | Ile | Pro | Leu | Ala | Trp | Arg | Gln | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Gln | Leu | Tyr | Lys | Leu | Tyr | Glu | Ala | Asp | Phe | Val | Leu | Phe | Gly | Tyr | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Pro | Lys | Pro | Glu | Asn | Leu | Leu | Arg | Asp | | | | | | | |
| | | | | 410 | | | | | | | | | | | |

<210> 467
 <211> 1071
 <212> DNA
 <213> Homo sapiens

<400> 467
 tcgggccaga attcggcacg aggcggcacg agggcgacgg cctcacgggg 50
 ctttggaggt gaaagaggcc cagagtagag agagagagag accgacgtac 100
 acgggatggc tacgggaacg cgctatgccg ggaaggtggt ggctcgtgacc 150
 gggggcgggc gcggcatcgg agctgggatc gtgcgcgcct tcgtgaacag 200
 cgggggcccga gtggttatct gcgacaagga tgagtctggg ggcggggccc 250
 tggagcagga gctccctgga gctgtcttta tcctctgtga tgtgactcag 300
 gaagatgatg tgaagaccct ggtttctgag accatccgcc gatttggccg 350
 cctggattgt gttgtcaaca acgtggcca ccaccacccc ccacagaggc 400

ctgaggagac ctctgcccag ggattccgcc agctgctgga gctgaacctta 450
 ctgggggacgt acaccttgac caagctcgcc ctcccctacc tgcggaagag 500
 tcaaggggaat gtcataca tctccagcct ggtgggggca atcgccagg 550
 cccaggcagt tccctatgtg gccaccaagg gggcagtaac agccatgacc 600
 aaagcttttg ccttgatga aagtccatat ggtgtccgag tcaactgtat 650
 ctccccagga aacatctgga ccccgctgtg ggaggagctg gcagccttaa 700
 tgccagaccc tagggccaca atccgagagg gcatgctggc ccagccactg 750
 ggccgcatgg gccagcccgc tgaggtcggg gctgcggcag tgttctctggc 800
 ctccgaagcc aacttctgca cgggcattga actgctcgtg acgggggggtg 850
 cagagctggg gtacgggtgc aaggccagtc ggagcacccc cgtggacgcc 900
 cccgatatcc cttcctgatt tctctcattt ctacttgggg ccccttccct 950
 aggactctcc caccctaaac tccaacctgt atcagatgca gcccccaagc 1000
 ccttagactc taagcccagt tagcaagggt cggggtcacc ctgcagggttc 1050
 ccataaaaac gatttgcagc c 1071

<210> 468

<211> 270

<212> PRT

<213> Homo sapiens

<400> 468

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Thr | Gly | Thr | Arg | Tyr | Ala | Gly | Lys | Val | Val | Val | Val | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Gly | Gly | Arg | Gly | Ile | Gly | Ala | Gly | Ile | Val | Arg | Ala | Phe | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Asn | Ser | Gly | Ala | Arg | Val | Val | Ile | Cys | Asp | Lys | Asp | Glu | Ser | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Arg | Ala | Leu | Glu | Gln | Glu | Leu | Pro | Gly | Ala | Val | Phe | Ile | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Cys | Asp | Val | Thr | Gln | Glu | Asp | Asp | Val | Lys | Thr | Leu | Val | Ser | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Ile | Arg | Arg | Phe | Gly | Arg | Leu | Asp | Cys | Val | Val | Asn | Asn | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | His | His | Pro | Pro | Pro | Gln | Arg | Pro | Glu | Glu | Thr | Ser | Ala | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Phe | Arg | Gln | Leu | Leu | Glu | Leu | Asn | Leu | Leu | Gly | Thr | Tyr | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Leu Thr Lys Leu | Ala Leu Pro Tyr Leu | Arg Lys Ser Gln Gly | Asn |
| | 125 | 130 | 135 |
| Val Ile Asn Ile | Ser Ser Leu Val Gly | Ala Ile Gly Gln Ala | Gln |
| | 140 | 145 | 150 |
| Ala Val Pro Tyr | Val Ala Thr Lys Gly | Ala Val Thr Ala Met | Thr |
| | 155 | 160 | 165 |
| Lys Ala Leu Ala | Leu Asp Glu Ser Pro | Tyr Gly Val Arg Val | Asn |
| | 170 | 175 | 180 |
| Cys Ile Ser Pro | Gly Asn Ile Trp Thr | Pro Leu Trp Glu Glu | Leu |
| | 185 | 190 | 195 |
| Ala Ala Leu Met | Pro Asp Pro Arg Ala | Thr Ile Arg Glu Gly | Met |
| | 200 | 205 | 210 |
| Leu Ala Gln Pro | Leu Gly Arg Met Gly | Gln Pro Ala Glu Val | Gly |
| | 215 | 220 | 225 |
| Ala Ala Ala Val | Phe Leu Ala Ser Glu | Ala Asn Phe Cys Thr | Gly |
| | 230 | 235 | 240 |
| Ile Glu Leu Leu | Val Thr Gly Gly Ala | Glu Leu Gly Tyr Gly | Cys |
| | 245 | 250 | 255 |
| Lys Ala Ser Arg | Ser Thr Pro Val Asp | Ala Pro Asp Ile Pro | Ser |
| | 260 | 265 | 270 |

<210> 469
 <211> 687
 <212> DNA
 <213> Homo sapiens

<400> 469
 aggcggggcag cagctgcagg ctgaccttgc agcttggcgg aatggactgg 50
 cctcacaacc tgctgtttct tcttaccatt tccatcttcc tggggctggg 100
 ccagcccagg agccccaaaa gcaagaggaa ggggcaaggg cggcctgggc 150
 ccctggcccc tggccctcac caggtgccac tggacctggt gtcacggatg 200
 aaaccgtatg cccgcatgga ggagtatgag aggaacatcg aggagatggt 250
 ggcccagctg aggaacagct cagagctggc ccagagaaaag tgtgaggtca 300
 acttgacgct gtggatgtcc aacaagagga gcctgtctcc ctggggctac 350
 agcatcaacc acgaccccag ccgtatcccc gtggacctgc cggaggcacg 400
 gtgcctgtgt ctgggctgtg tgaacccctt caccatgcag gaggaccgca 450
 gcatggtgag cgtgccggtg ttcagccagg ttcctgtgag ccgccgcctc 500
 tgcccgccac cgccccgcac agggccttgc cgccagcgcg cagtcatgga 550

gaccatcgct gtgggctgca cctgcatctt ctgaatcacc tggcccagaa 600
 gccaggccag cagcccgaga ccatacctcct tgcacctttg tgccaagaaa 650
 ggcctatgaa aagtaaacac tgacttttga aagcaag 687

<210> 470
 <211> 180
 <212> PRT
 <213> Homo sapiens

<400> 470
 Met Asp Trp Pro His Asn Leu Leu Phe Leu Leu Thr Ile Ser Ile
 1 5 10 15
 Phe Leu Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys
 20 25 30
 Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln Val
 35 40 45
 Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu
 50 55 60
 Glu Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn
 65 70 75
 Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu
 80 85 90
 Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile
 95 100 105
 Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg
 110 115 120
 Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp
 125 130 135
 Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg
 140 145 150
 Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln
 155 160 165
 Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe
 170 175 180

<210> 471
 <211> 2368
 <212> DNA
 <213> Homo sapiens

<400> 471
 gcgcccag gcgtaggcgg ggtggccctt gcgtctcccg cttccttgaa 50
 aaaccggcg ggcgagcgag gctgcgggcc ggccgctgcc cttccccaca 100

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cgccccgcag ctaacggcgc tcctggccgc ctggatcgcg gctgtggcgg 200
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<210> 472

<211> 349

<212> PRT

<213> Homo sapiens

<400> 472

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Gly | Arg | Cys | Gly | Pro | Gln | Leu | Thr | Ala | Leu | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Trp | Ile | Ala | Ala | Val | Ala | Ala | Thr | Ala | Gly | Pro | Glu | Glu | Ala |
| | | | 20 | | | | | 25 | | | | | | 30 |
| Ala | Leu | Pro | Pro | Glu | Gln | Ser | Arg | Val | Gln | Pro | Met | Thr | Ala | Ser |
| | | | 35 | | | | | 40 | | | | | | 45 |
| Asn | Trp | Thr | Leu | Val | Met | Glu | Gly | Glu | Trp | Met | Leu | Lys | Phe | Tyr |
| | | | 50 | | | | | 55 | | | | | | 60 |
| Ala | Pro | Trp | Cys | Pro | Ser | Cys | Gln | Gln | Thr | Asp | Ser | Glu | Trp | Glu |
| | | | 65 | | | | | 70 | | | | | | 75 |
| Ala | Phe | Ala | Lys | Asn | Gly | Glu | Ile | Leu | Gln | Ile | Ser | Val | Gly | Lys |
| | | | 80 | | | | | 85 | | | | | | 90 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asp | Val | Ile | Gln | Glu | Pro | Gly | Leu | Ser | Gly | Arg | Phe | Phe | Val | 95 | 100 | 105 |
| Thr | Thr | Leu | Pro | Ala | Phe | Phe | His | Ala | Lys | Asp | Gly | Ile | Phe | Arg | 110 | 115 | 120 |
| Arg | Tyr | Arg | Gly | Pro | Gly | Ile | Phe | Glu | Asp | Leu | Gln | Asn | Tyr | Ile | 125 | 130 | 135 |
| Leu | Glu | Lys | Lys | Trp | Gln | Ser | Val | Glu | Pro | Leu | Thr | Gly | Trp | Lys | 140 | 145 | 150 |
| Ser | Pro | Ala | Ser | Leu | Thr | Met | Ser | Gly | Met | Ala | Gly | Leu | Phe | Ser | 155 | 160 | 165 |
| Ile | Ser | Gly | Lys | Ile | Trp | His | Leu | His | Asn | Tyr | Phe | Thr | Val | Thr | 170 | 175 | 180 |
| Leu | Gly | Ile | Pro | Ala | Trp | Cys | Ser | Tyr | Val | Phe | Phe | Val | Ile | Ala | 185 | 190 | 195 |
| Thr | Leu | Val | Phe | Gly | Leu | Phe | Met | Gly | Leu | Val | Leu | Val | Val | Ile | 200 | 205 | 210 |
| Ser | Glu | Cys | Phe | Tyr | Val | Pro | Leu | Pro | Arg | His | Leu | Ser | Glu | Arg | 215 | 220 | 225 |
| Ser | Glu | Gln | Asn | Arg | Arg | Ser | Glu | Glu | Ala | His | Arg | Ala | Glu | Gln | 230 | 235 | 240 |
| Leu | Gln | Asp | Ala | Glu | Glu | Glu | Lys | Asp | Asp | Ser | Asn | Glu | Glu | Glu | 245 | 250 | 255 |
| Asn | Lys | Asp | Ser | Leu | Val | Asp | Asp | Glu | Glu | Glu | Lys | Glu | Asp | Leu | 260 | 265 | 270 |
| Gly | Asp | Glu | Asp | Glu | Ala | Glu | Glu | Glu | Glu | Glu | Glu | Asp | Asn | Leu | 275 | 280 | 285 |
| Ala | Ala | Gly | Val | Asp | Glu | Glu | Arg | Ser | Glu | Ala | Asn | Asp | Gln | Gly | 290 | 295 | 300 |
| Pro | Pro | Gly | Glu | Asp | Gly | Val | Thr | Arg | Glu | Glu | Val | Glu | Pro | Glu | 305 | 310 | 315 |
| Glu | Ala | Glu | Glu | Gly | Ile | Ser | Glu | Gln | Pro | Cys | Pro | Ala | Asp | Thr | 320 | 325 | 330 |
| Glu | Val | Val | Glu | Asp | Ser | Leu | Arg | Gln | Arg | Lys | Ser | Gln | His | Ala | 335 | 340 | 345 |

Asp Lys Gly Leu

<210> 473

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 474
<211> 24
<212> DNA
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<223> Synthetic oligonucleotide probe

<400> 474
ctctcctcat ccacaccagc agcc 24

<210> 475
<211> 44
<212> DNA
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<210> 476
<211> 2478
<212> DNA
<213> Homo sapiens

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tcaagaacaa tggaatatca tcctgattta gaaaatttgg atgaagatgg 200
atatactcaa ttacacttcg actctcaaag caataccagg atagctgttg 250
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<210> 477

<211> 201

<212> PRT

<213> Homo sapiens

<400> 477

| | | | | | | | | | | | | | | | | | | |
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| Met | Glu | Tyr | His | Pro | Asp | Leu | Glu | Asn | Leu | Asp | Glu | Asp | Gly | Tyr | 1 | 5 | 10 | 15 |
| Thr | Gln | Leu | His | Phe | Asp | Ser | Gln | Ser | Asn | Thr | Arg | Ile | Ala | Val | 20 | 25 | 30 | |
| Val | Ser | Glu | Lys | Gly | Ser | Cys | Ala | Ala | Ser | Pro | Pro | Trp | Arg | Leu | 35 | 40 | 45 | |
| Ile | Ala | Val | Ile | Leu | Gly | Ile | Leu | Cys | Leu | Val | Ile | Leu | Val | Ile | 50 | 55 | 60 | |
| Ala | Val | Val | Leu | Gly | Thr | Met | Gly | Val | Leu | Ser | Ser | Pro | Cys | Pro | 65 | 70 | 75 | |
| Pro | Asn | Trp | Ile | Ile | Tyr | Glu | Lys | Ser | Cys | Tyr | Leu | Phe | Ser | Met | 80 | 85 | 90 | |
| Ser | Leu | Asn | Ser | Trp | Asp | Gly | Ser | Lys | Arg | Gln | Cys | Trp | Gln | Leu | 95 | 100 | 105 | |
| Gly | Ser | Asn | Leu | Leu | Lys | Ile | Asp | Ser | Ser | Asn | Glu | Leu | Gly | Phe | 110 | 115 | 120 | |
| Ile | Val | Lys | Gln | Val | Ser | Ser | Gln | Pro | Asp | Asn | Ser | Phe | Trp | Ile | 125 | 130 | 135 | |
| Gly | Leu | Ser | Arg | Pro | Gln | Thr | Glu | Val | Pro | Trp | Leu | Trp | Glu | Asp | 140 | 145 | 150 | |
| Gly | Ser | Thr | Phe | Ser | Ser | Asn | Leu | Phe | Gln | Ile | Arg | Thr | Thr | Ala | 155 | 160 | 165 | |
| Thr | Gln | Glu | Asn | Pro | Ser | Pro | Asn | Cys | Val | Trp | Ile | His | Val | Ser | | | | |

| | | | | | |
|-----|-----|-----|-----|-----|-----|
| | 170 | | 175 | | 180 |
| Val | Ile | Tyr | Asp | Gln | Leu |
| | | | | Cys | Ser |
| | | | | Val | Pro |
| | | | | Ser | Tyr |
| | | | | Ser | Ile |
| | | | | Cys | |
| | | | | 185 | 190 |
| | | | | | 195 |
| Glu | Lys | Lys | Phe | Ser | Met |
| | | | | 200 | |

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<210> 479
 <211> 20
 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 479
 acaagtgtct tcccaacctg 20

<210> 480
 <211> 24
 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 480
 atcctcccag agccatggta cctc 24

<210> 481
 <211> 51
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 481
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<210> 482
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 <212> DNA
 <213> Homo sapiens

<400> 482

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 <211> 693
 <212> PRT
 <213> Homo sapiens

<400> 483
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 35 40 45
 Leu His Tyr Lys Pro Thr Pro Asp Leu Arg Ile Ser Ile Glu Asn
 50 55 60
 Ser Glu Glu Ala Leu Thr Val His Ala Pro Phe Pro Ala Ala His
 65 70 75

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Ala | Ser | Arg | Ser | Phe | Pro | Asp | Pro | Arg | Gly | Leu | Tyr | His | Phe | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Cys | Leu | Tyr | Trp | Asn | Arg | His | Ala | Gly | Arg | Leu | His | Leu | Leu | Tyr | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gly | Lys | Arg | Asp | Phe | Leu | Leu | Ser | Asp | Lys | Ala | Ser | Ser | Leu | Leu | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Cys | Phe | Gln | His | Gln | Glu | Glu | Ser | Leu | Ala | Gln | Gly | Pro | Pro | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Leu | Ala | Thr | Ser | Val | Thr | Ser | Trp | Trp | Ser | Pro | Gln | Asn | Ile | Ser | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Leu | Pro | Ser | Ala | Ala | Ser | Phe | Thr | Phe | Ser | Phe | His | Ser | Pro | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| His | Thr | Ala | Ala | His | Asn | Ala | Ser | Val | Asp | Met | Cys | Glu | Leu | Lys | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Arg | Asp | Leu | Gln | Leu | Leu | Ser | Gln | Phe | Leu | Lys | His | Pro | Gln | Lys | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Ser | Arg | Arg | Pro | Ser | Ala | Ala | Pro | Ala | Ser | Gln | Gln | Leu | Gln | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ser | Leu | Glu | Ser | Lys | Leu | Thr | Ser | Val | Arg | Phe | Met | Gly | Asp | Met | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Val | Ser | Phe | Glu | Glu | Asp | Arg | Ile | Asn | Ala | Thr | Val | Trp | Lys | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gln | Pro | Thr | Ala | Gly | Leu | Gln | Asp | Leu | His | Ile | His | Ser | Arg | Gln | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Glu | Glu | Gln | Ser | Glu | Ile | Met | Glu | Tyr | Ser | Val | Leu | Leu | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Arg | Thr | Leu | Phe | Gln | Arg | Thr | Lys | Gly | Arg | Ser | Gly | Glu | Ala | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Lys | Arg | Leu | Leu | Leu | Val | Asp | Phe | Ser | Ser | Gln | Ala | Leu | Phe | Gln | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Asp | Lys | Asn | Ser | Ser | Gln | Val | Leu | Gly | Glu | Lys | Val | Leu | Gly | Ile | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Val | Gln | Asn | Thr | Lys | Val | Ala | Asn | Leu | Thr | Glu | Pro | Val | Val | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Leu | Thr | Phe | Gln | His | Gln | Leu | Gln | Pro | Lys | Asn | Val | Thr | Leu | Gln | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Cys | Val | Phe | Trp | Val | Glu | Asp | Pro | Thr | Leu | Ser | Ser | Pro | Gly | His | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Trp | Ser | Ser | Ala | Gly | Cys | Glu | Thr | Val | Arg | Arg | Glu | Thr | Gln | Thr | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 365 | | 370 | | 375 |
| Ser Cys Phe Cys | Asn His Leu Thr Tyr | Phe Ala Val Leu Met Val | | | |
| | 380 | 385 | | | 390 |
| Ser Ser Val Glu | Val Asp Ala Val His | Lys His Tyr Leu Ser Leu | | | |
| | 395 | 400 | | | 405 |
| Leu Ser Tyr Val | Gly Cys Val Val Ser | Ala Leu Ala Cys Leu Val | | | |
| | 410 | 415 | | | 420 |
| Thr Ile Ala Ala | Tyr Leu Cys Ser Arg | Val Pro Leu Pro Cys Arg | | | |
| | 425 | 430 | | | 435 |
| Arg Lys Pro Arg | Asp Tyr Thr Ile Lys | Val His Met Asn Leu Leu | | | |
| | 440 | 445 | | | 450 |
| Leu Ala Val Phe | Leu Leu Asp Thr Ser | Phe Leu Leu Ser Glu Pro | | | |
| | 455 | 460 | | | 465 |
| Val Ala Leu Thr | Gly Ser Glu Ala Gly | Cys Arg Ala Ser Ala Ile | | | |
| | 470 | 475 | | | 480 |
| Phe Leu His Phe | Ser Leu Leu Thr Cys | Leu Ser Trp Met Gly Leu | | | |
| | 485 | 490 | | | 495 |
| Glu Gly Tyr Asn | Leu Tyr Arg Leu Val | Val Glu Val Phe Gly Thr | | | |
| | 500 | 505 | | | 510 |
| Tyr Val Pro Gly | Tyr Leu Leu Lys Leu | Ser Ala Met Gly Trp Gly | | | |
| | 515 | 520 | | | 525 |
| Phe Pro Ile Phe | Leu Val Thr Leu Val | Ala Leu Val Asp Val Asp | | | |
| | 530 | 535 | | | 540 |
| Asn Tyr Gly Pro | Ile Ile Leu Ala Val | His Arg Thr Pro Glu Gly | | | |
| | 545 | 550 | | | 555 |
| Val Ile Tyr Pro | Ser Met Cys Trp Ile | Arg Asp Ser Leu Val Ser | | | |
| | 560 | 565 | | | 570 |
| Tyr Ile Thr Asn | Leu Gly Leu Phe Ser | Leu Val Phe Leu Phe Asn | | | |
| | 575 | 580 | | | 585 |
| Met Ala Met Leu | Ala Thr Met Val Val | Gln Ile Leu Arg Leu Arg | | | |
| | 590 | 595 | | | 600 |
| Pro His Thr Gln | Lys Trp Ser His Val | Leu Thr Leu Leu Gly Leu | | | |
| | 605 | 610 | | | 615 |
| Ser Leu Val Leu | Gly Leu Pro Trp Ala | Leu Ile Phe Phe Ser Phe | | | |
| | 620 | 625 | | | 630 |
| Ala Ser Gly Thr | Phe Gln Leu Val Val | Leu Tyr Leu Phe Ser Ile | | | |
| | 635 | 640 | | | 645 |
| Ile Thr Ser Phe | Gln Gly Phe Leu Ile | Phe Ile Trp Tyr Trp Ser | | | |
| | 650 | 655 | | | 660 |

Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro Leu Lys Ser Asn
665 670 675

Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser Thr Ser Ser
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Ser Arg Ile

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<211> 516

<212> DNA

<213> Homo sapiens

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<223> unknown base

<400> 484

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cgggtggcct gacaggctct gaaggctggc tgccgagcca gtgccatctt 200

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tgtgcatagg actccagagg gcgtcatcta cccttccatg tgctggatcc 450

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tttctgttca acatgg 516

<210> 485

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 485

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<210> 486

<211> 24

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<220>
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<400> 486
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<210> 487
<211> 2849
<212> DNA
<213> Homo sapiens

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<221> unsure
<222> 2715
<223> unknown base

<400> 487
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aagagggctc taggaaaaag ttttggatgg gattatgtgg aaactaccct 150
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<211> 345

<212> PRT

<213> Homo sapiens

<400> 488

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| Met | Ser | Leu | Phe | Gly | Leu | Leu | Leu | Leu | Thr | Ser | Ala | Leu | Ala | Gly | 1 | 5 | 10 | 15 |
| Gln | Arg | Gln | Gly | Thr | Gln | Ala | Glu | Ser | Asn | Leu | Ser | Ser | Lys | Phe | 20 | 25 | 30 | |
| Gln | Phe | Ser | Ser | Asn | Lys | Glu | Gln | Asn | Gly | Val | Gln | Asp | Pro | Gln | 35 | 40 | 45 | |
| His | Glu | Arg | Ile | Ile | Thr | Val | Ser | Thr | Asn | Gly | Ser | Ile | His | Ser | 50 | 55 | 60 | |
| Pro | Arg | Phe | Pro | His | Thr | Tyr | Pro | Arg | Asn | Thr | Val | Leu | Val | Trp | 65 | 70 | 75 | |
| Arg | Leu | Val | Ala | Val | Glu | Glu | Asn | Val | Trp | Ile | Gln | Leu | Thr | Phe | 80 | 85 | 90 | |
| Asp | Glu | Arg | Phe | Gly | Leu | Glu | Asp | Pro | Glu | Asp | Asp | Ile | Cys | Lys | 95 | 100 | 105 | |
| Tyr | Asp | Phe | Val | Glu | Val | Glu | Glu | Pro | Ser | Asp | Gly | Thr | Ile | Leu | 110 | 115 | 120 | |
| Gly | Arg | Trp | Cys | Gly | Ser | Gly | Thr | Val | Pro | Gly | Lys | Gln | Ile | Ser | 125 | 130 | 135 | |
| Lys | Gly | Asn | Gln | Ile | Arg | Ile | Arg | Phe | Val | Ser | Asp | Glu | Tyr | Phe | 140 | 145 | 150 | |
| Pro | Ser | Glu | Pro | Gly | Phe | Cys | Ile | His | Tyr | Asn | Ile | Val | Met | Pro | 155 | 160 | 165 | |
| Gln | Phe | Thr | Glu | Ala | Val | Ser | Pro | Ser | Val | Leu | Pro | Pro | Ser | Ala | 170 | 175 | 180 | |
| Leu | Pro | Leu | Asp | Leu | Leu | Asn | Asn | Ala | Ile | Thr | Ala | Phe | Ser | Thr | 185 | 190 | 195 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Glu | Asp | Leu | Ile | Arg | Tyr | Leu | Glu | Pro | Glu | Arg | Trp | Gln | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Asp | Leu | Glu | Asp | Leu | Tyr | Arg | Pro | Thr | Trp | Gln | Leu | Leu | Gly | Lys | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Phe | Val | Phe | Gly | Arg | Lys | Ser | Arg | Val | Val | Asp | Leu | Asn | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Thr | Glu | Glu | Val | Arg | Leu | Tyr | Ser | Cys | Thr | Pro | Arg | Asn | Phe | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ser | Val | Ser | Ile | Arg | Glu | Glu | Leu | Lys | Arg | Thr | Asp | Thr | Ile | Phe | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Trp | Pro | Gly | Cys | Leu | Leu | Val | Lys | Arg | Cys | Gly | Gly | Asn | Cys | Ala | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Cys | Cys | Leu | His | Asn | Cys | Asn | Glu | Cys | Gln | Cys | Val | Pro | Ser | Lys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Val | Thr | Lys | Lys | Tyr | His | Glu | Val | Leu | Gln | Leu | Arg | Pro | Lys | Thr | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Gly | Val | Arg | Gly | Leu | His | Lys | Ser | Leu | Thr | Asp | Val | Ala | Leu | Glu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| His | His | Glu | Glu | Cys | Asp | Cys | Val | Cys | Arg | Gly | Ser | Thr | Gly | Gly | |
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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 489

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<210> 490

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 490

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<223> Synthetic oligonucleotide probe

<400> 491

caccacagcg tttaaccagg 20

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<211> 20

<212> DNA

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<220>

<223> Synthetic oligonucleotide probe

<400> 492

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<210> 493

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<223> Synthetic oligonucleotide probe

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<210> 495

<211> 3283

<212> DNA

<213> Homo sapiens

<400> 495

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ggacactgaa gagacaaatt cttatccttt ttaacataat cctaatttcc 150

aaactccttg gggctagatg gtttcctaaa actctgccct gtgatgtcac 200

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<210> 496

<211> 1049

<212> PRT

<213> Homo sapiens

<400> 496

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Val | Phe | Pro | Met | Trp | Thr | Leu | Lys | Arg | Gln | Ile | Leu | Ile | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Phe | Asn | Ile | Ile | Leu | Ile | Ser | Lys | Leu | Leu | Gly | Ala | Arg | Trp | Phe | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Pro | Lys | Thr | Leu | Pro | Cys | Asp | Val | Thr | Leu | Asp | Val | Pro | Lys | Asn | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| His | Val | Ile | Val | Asp | Cys | Thr | Asp | Lys | His | Leu | Thr | Glu | Ile | Pro | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Gly | Gly | Ile | Pro | Thr | Asn | Thr | Thr | Asn | Leu | Thr | Leu | Thr | Ile | Asn | |
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| His | His | Asn | Arg | Phe | Leu | Cys | Thr | Cys | Asp | Ala | Val | Trp | Phe | Val | | | | | |
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| Ile | Leu | Phe | Ser | Leu | Ser | Ile | Ser | Val | Ser | Leu | Phe | Leu | Met | Val | 845 | 850 | 855 |
| Met | Met | Thr | Ala | Ser | His | Leu | Tyr | Phe | Trp | Asp | Val | Trp | Tyr | Ile | 860 | 865 | 870 |
| Tyr | His | Phe | Cys | Lys | Ala | Lys | Ile | Lys | Gly | Tyr | Gln | Arg | Leu | Ile | 875 | 880 | 885 |
| Ser | Pro | Asp | Cys | Cys | Tyr | Asp | Ala | Phe | Ile | Val | Tyr | Asp | Thr | Lys | 890 | 895 | 900 |
| Asp | Pro | Ala | Val | Thr | Glu | Trp | Val | Leu | Ala | Glu | Leu | Val | Ala | Lys | 905 | 910 | 915 |
| Leu | Glu | Asp | Pro | Arg | Glu | Lys | His | Phe | Asn | Leu | Cys | Leu | Glu | Glu | 920 | 925 | 930 |
| Arg | Asp | Trp | Leu | Pro | Gly | Gln | Pro | Val | Leu | Glu | Asn | Leu | Ser | Gln | 935 | 940 | 945 |
| Ser | Ile | Gln | Leu | Ser | Lys | Lys | Thr | Val | Phe | Val | Met | Thr | Asp | Lys | 950 | 955 | 960 |
| Tyr | Ala | Lys | Thr | Glu | Asn | Phe | Lys | Ile | Ala | Phe | Tyr | Leu | Ser | His | 965 | 970 | 975 |
| Gln | Arg | Leu | Met | Asp | Glu | Lys | Val | Asp | Val | Ile | Ile | Leu | Ile | Phe | 980 | 985 | 990 |
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| Leu Ser Leu Ile | Gln Asn Asn Ile Tyr | Asn Ile Thr Lys Glu | Gly | | |
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| Ile Ser Arg Leu | Ile Asn Leu Lys Asn | Leu Tyr Leu Ala Trp | Asn | | |
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| Asn Cys Pro Arg | Cys Phe Asn Ala Pro | Phe Pro Cys Val Pro | Cys | | |
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| Asp | Thr | Arg | Gln | Ser 440 | Tyr | Ala | Asn | Ser | Ser 445 | Ser | Phe | Gln | Arg | His 450 |
| Ile | Arg | Lys | Arg | Arg 455 | Ser | Thr | Asp | Phe | Glu 460 | Phe | Asp | Pro | His | Ser 465 |
| Asn | Phe | Tyr | His | Phe 470 | Thr | Arg | Pro | Leu | Ile 475 | Lys | Pro | Gln | Cys | Ala 480 |
| Ala | Tyr | Gly | Lys | Ala 485 | Leu | Asp | Leu | Ser | Leu 490 | Asn | Ser | Ile | Phe | Phe 495 |
| Ile | Gly | Pro | Asn | Gln 500 | Phe | Glu | Asn | Leu | Pro 505 | Asp | Ile | Ala | Cys | Leu 510 |
| Asn | Leu | Ser | Ala | Asn 515 | Ser | Asn | Ala | Gln | Val 520 | Leu | Ser | Gly | Thr | Glu 525 |
| Phe | Ser | Ala | Ile | Pro 530 | His | Val | Lys | Tyr | Leu 535 | Asp | Leu | Thr | Asn | Asn 540 |
| Arg | Leu | Asp | Phe | Asp 545 | Asn | Ala | Ser | Ala | Leu 550 | Thr | Glu | Leu | Ser | Asp 555 |
| Leu | Glu | Val | Leu | Asp 560 | Leu | Ser | Tyr | Asn | Ser 565 | His | Tyr | Phe | Arg | Ile 570 |
| Ala | Gly | Val | Thr | His 575 | His | Leu | Glu | Phe | Ile 580 | Gln | Asn | Phe | Thr | Asn 585 |
| Leu | Lys | Val | Leu | Asn 590 | Leu | Ser | His | Asn | Asn 595 | Ile | Tyr | Thr | Leu | Thr 600 |
| Asp | Lys | Tyr | Asn | Leu 605 | Glu | Ser | Lys | Ser | Leu 610 | Val | Glu | Leu | Val | Phe 615 |
| Ser | Gly | Asn | Arg | Leu 620 | Asp | Ile | Leu | Trp | Asn 625 | Asp | Asp | Asp | Asn | Arg 630 |
| Tyr | Ile | Ser | Ile | Phe | Lys | Gly | Leu | Lys | Asn | Leu | Thr | Arg | Leu | Asp |

| | | |
|-------------------------|---|---------|
| 635 | 640 | 645 |
| Leu Ser Leu Asn Arg 650 | Leu Lys His Ile Pro Asn Glu Ala Phe 655 | Leu 660 |
| Asn Leu Pro Ala Ser 665 | Leu Thr Glu Leu His Ile Asn Asp Asn 670 | Met 675 |
| Leu Lys Phe Phe Asn 680 | Trp Thr Leu Leu Gln Gln Phe Pro Arg 685 | Leu 690 |
| Glu Leu Leu Asp 695 | Leu Arg Gly Asn Lys Leu Leu Phe Leu Thr 700 | Asp 705 |
| Ser Leu Ser Asp 710 | Phe Thr Ser Ser Leu Arg Thr Leu Leu Leu 715 | Ser 720 |
| His Asn Arg Ile Ser 725 | His Leu Pro Ser Gly Phe Leu Ser Glu 730 | Val 735 |
| Ser Ser Leu Lys 740 | His Leu Asp Leu Ser Ser Asn Leu Leu Lys 745 | Thr 750 |
| Ile Asn Lys Ser 755 | Ala Leu Glu Thr Lys Thr Thr Thr Lys Leu 760 | Ser 765 |
| Met Leu Glu Leu 770 | His Gly Asn Pro Phe Glu Cys Thr Cys Asp 775 | Ile 780 |
| Gly Asp Phe Arg 785 | Arg Trp Met Asp Glu His Leu Asn Val Lys 790 | Ile 795 |
| Pro Arg Leu Val 800 | Asp Val Ile Cys Ala Ser Pro Gly Asp Gln 805 | Arg 810 |
| Gly Lys Ser Ile 815 | Val Ser Leu Glu Leu Thr Thr Cys Val Ser 820 | Asp 825 |
| Val Thr Ala Val 830 | Ile Leu Phe Phe Phe Thr Phe Phe Ile Thr 835 | Thr 840 |
| Met Val Met Leu 845 | Ala Ala Leu Ala His His Leu Phe Tyr Trp 850 | Asp 855 |
| Val Trp Phe Ile 860 | Tyr Asn Val Cys Leu Ala Lys Val Lys Gly 865 | Tyr 870 |
| Arg Ser Leu Ser 875 | Thr Ser Gln Thr Phe Tyr Asp Ala Tyr Ile 880 | Ser 885 |
| Tyr Asp Thr Lys 890 | Asp Ala Ser Val Thr Asp Trp Val Ile Asn 895 | Glu 900 |
| Leu Arg Tyr His 905 | Leu Glu Glu Ser Arg Asp Lys Asn Val Leu 910 | Leu 915 |
| Cys Leu Glu Glu 920 | Arg Asp Trp Asp Pro Gly Leu Ala Ile Ile 925 | Asp 930 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|--|
| Asn | Leu | Met | Gln | Ser | Ile | Asn | Gln | Ser | Lys | Lys | Thr | Val | Phe | Val | |
| | | | | 935 | | | | | 940 | | | | | 945 | |
| Leu | Thr | Lys | Lys | Tyr | Ala | Lys | Ser | Trp | Asn | Phe | Lys | Thr | Ala | Phe | |
| | | | | 950 | | | | | 955 | | | | | 960 | |
| Tyr | Leu | Ala | Leu | Gln | Arg | Leu | Met | Asp | Glu | Asn | Met | Asp | Val | Ile | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
| Ile | Phe | Ile | Leu | Leu | Glu | Pro | Val | Leu | Gln | His | Ser | Gln | Tyr | Leu | |
| | | | | 980 | | | | | 985 | | | | | 990 | |
| Arg | Leu | Arg | Gln | Arg | Ile | Cys | Lys | Ser | Ser | Ile | Leu | Gln | Trp | Pro | |
| | | | | 995 | | | | | 1000 | | | | | 1005 | |
| Asp | Asn | Pro | Lys | Ala | Glu | Gly | Leu | Phe | Trp | Gln | Thr | Leu | Arg | Asn | |
| | | | | 1010 | | | | | 1015 | | | | | 1020 | |
| Val | Val | Leu | Thr | Glu | Asn | Asp | Ser | Arg | Tyr | Asn | Asn | Met | Tyr | Val | |
| | | | | 1025 | | | | | 1030 | | | | | 1035 | |
| Asp | Ser | Ile | Lys | Gln | Tyr | | | | | | | | | | |
| | | | | 1040 | | | | | | | | | | | |

<210> 499
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 499
 taaagaccca gctgtgaccg 20

<210> 500
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 500
 atccatgagc ctctgatggg 20

<210> 501
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 501
 atttatgtct cgaggaaagg gactggttac cagggcagcc agttc 45

<210> 502

<211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 502
 gccgagacaa aaacgttctc c 21

<210> 503
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 503
 catccatgtt ctcatccatt agcc 24

<210> 504
 <211> 46
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 504
 tcgacaacct catgcagagc atcaaccaa gcaagaaaac agtatt 46

<210> 505
 <211> 1738
 <212> DNA
 <213> Homo sapiens

<400> 505
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 ggctgcaagg gaggtctctg tggacaggcc aggcagggtg gcctcaggag 150
 gtgcctccag gcggccagtg ggctgaggc cccagcaagg gctaggggtc 200
 atctccagtc ccaggacaca gcagcggcca ccatggccac gcctgggctc 250
 cagcagcatc agcagcccc aggaccggg aggcacaggt ggccccacc 300
 acccgaggga gcagctctg cccctgtccg ggggatgact gattctcctc 350
 cgccaggcca cccagaggag aaggccacc cgctggagg cacaggccat 400
 gaggggctct caggagggtg tgctgatgtg gcttctggtg ttggcagtgg 450
 gcggcacaga gcacgcctac cggcccggcc gtaggggtgtg tgctgtccgg 500

gtcacgggg accctgtctc cgagtcgttc gtgcagcgtg tgtaccagcc 550
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agctccctgc tggagcctgg gacccatggc acaggccagg cagcccgagg 1550
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aatgaaacgt gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650
aaagggcggc cgcgactcta gagtcgacct gcagaagctt ggccgccatg 1700
gcccacttg tttattgcag cttataatgg ttacaaat 1738

<210> 506
<211> 273
<212> PRT
<213> Homo sapiens

<400> 506
Met Arg Gly Ser Gln Glu Val Leu Leu Met Trp Leu Leu Val Leu
1 5 10 15

<400> 507

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ggccccagca agggctaggg tccatctcca gtcccaggac acagcagcgg 100
ccaccatggc cacgcctggg ctccagcagc atcagagcag cccctgtggt 150
tggcagcaaa gttcagcttg gctgggcccg ctgtgagggg cttcgcgcta 200
cgccctgcgg tgtcccagg gctgaggtct cctcatcttc tccctagcag 250
tggatgagca acccaacggg ggcccgggga ggggaactgg ccccgaggga 300
gaggaacccc aaagccacat ctgtagccag gatgagcagt gtgaatccag 350
gcagcccccga ggaccgggga ggcacagggtg gccccacca cccggaggag 400
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cgggggtgact gagcgggaag ccaggcaggg ccttctcct cttcctcctc 1450

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tcccaaggcc aggtggaccc tcagctgagg gaaggtacga gctccctgct 1600
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<210> 508

<211> 273

<212> PRT

<213> Homo sapiens

<400> 508

Met Arg Gly Ser Gln Glu Val Leu Leu Met Trp Leu Leu Val Leu
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Ala Val Gly Gly Thr Glu His Ala Tyr Arg Pro Gly Arg Arg Val
20 25 30

Cys Ala Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val
35 40 45

Gln Arg Val Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg
50 55 60

Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg
65 70 75

Ser Pro Gly Leu Ala Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro
80 85 90

Gly Trp Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala
95 100 105

Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro
110 115 120

Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln
125 130 135

Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln
140 145 150

Arg Cys Ile Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu
155 160 165

Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys Gly
170 175 180

Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala
185 190 195

Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu
200 205 210

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Lys | Leu | Gln | Leu | Val | Leu | Ala | Pro | Leu | His | Ser | Leu | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Gln | Ala | Leu | Glu | His | Gly | Leu | Pro | Asp | Pro | Gly | Ser | Leu | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | His | Ser | Phe | Gln | Gln | Leu | Gly | Arg | Ile | Asp | Ser | Leu | Ser | Glu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gln | Ile | Ser | Phe | Leu | Glu | Glu | Gln | Leu | Gly | Ser | Cys | Ser | Cys | Lys |
| | | | | 260 | | | | | 265 | | | | | 270 |

Lys Asp Ser

<210> 509
 <211> 1538
 <212> DNA
 <213> Homo sapiens

<400> 509
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 ctgaggcccc agcaagggct agggccatc tccagtccca ggacacagca 150
 gcggccacca tggccacgcc tgggctccag cagcatcagc agccccagg 200
 accggggagg cacaggtggc cccaccacc cggaggagca gctcctgccc 250
 ctgtccgggg gatgactgat tctcctccgc caggccacc agaggagaag 300
 gccaccccg cctggaggcac aggccatgag gggctctcag gaggtgctgc 350
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 cccggccgta ggggtgtgtg tgtccgggt caccggggacc ctgtctccga 450
 gtcgttcgtg cagcgtgtgt accagccctt cctcaccacc tgcgacgggc 500
 accgggcctg cagcacctac cgaaccatct ataggaccgc ctaccgccgc 550
 agccctgggc tggccctgc caggcctgc tacgctgct gcccggctg 600
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 cgccatgccg gaacggaggg agctgtgtcc agcctggccg ctgccgctgc 700
 cctgcaggat ggcggggtga cacttgccag tcagatgtgg atgaatgcag 750
 tgctaggagg ggcggctgtc cccagcgctg cgtcaacacc gccggcagtt 800
 actggtgcc a gtgttgggag gggcacagcc tgtctgcaga cggtaactc 850
 tgtgtgccca agggagggcc cccaggggtg gcccacaacc cgacaggagt 900
 ggacagtgca atgaaggaag aagtgcagag gctgcagtcc aggggtggacc 950

tgctggagga gaagctgcag ctggtgctgg cccactgca cagcctggcc 1000
tcgcaggcac tggagcatgg gctcccgac cccggcagcc tcctggtgca 1050
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tcctggagga gcagctgggg tcctgctcct gcaagaaaga ctctgactg 1150
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aggctcccca gaccctggca tgggatgggc tgggatcttc tctgtgaatc 1350
caccctggc tacccccacc ctggctaccc caacggcatc ccaaggccag 1400
gtgggccctc agctgaggga aggtacgagc tcctgctgg agcctgggac 1450
ccatggcaca ggccaggcag cccggaggct ggggtggggc tcagtggggg 1500
ctgctgcctg acccccagca caataaaaat gaaacgtg 1538

<210> 510

<211> 273

<212> PRT

<213> Homo sapiens

<400> 510

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln |

| | | |
|-------------------------------------|-------------------------|-----|
| 140 | 145 | 150 |
| Arg Cys Val Asn Thr Ala Gly Ser Tyr | Trp Cys Gln Cys Trp Glu | |
| 155 | 160 | 165 |
| Gly His Ser Leu Ser Ala Asp Gly Thr | Leu Cys Val Pro Lys Gly | |
| 170 | 175 | 180 |
| Gly Pro Pro Arg Val Ala Pro Asn Pro | Thr Gly Val Asp Ser Ala | |
| 185 | 190 | 195 |
| Met Lys Glu Glu Val Gln Arg Leu Gln | Ser Arg Val Asp Leu Leu | |
| 200 | 205 | 210 |
| Glu Glu Lys Leu Gln Leu Val Leu Ala | Pro Leu His Ser Leu Ala | |
| 215 | 220 | 225 |
| Ser Gln Ala Leu Glu His Gly Leu Pro | Asp Pro Gly Ser Leu Leu | |
| 230 | 235 | 240 |
| Val His Ser Phe Gln Gln Leu Gly Arg | Ile Asp Ser Leu Ser Glu | |
| 245 | 250 | 255 |
| Gln Ile Ser Phe Leu Glu Glu Gln Leu | Gly Ser Cys Ser Cys Lys | |
| 260 | 265 | 270 |
| Lys Asp Ser | | |

<210> 511
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 511
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<210> 512
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 512
 ttttcactc ctgtcgggtt gg 22

<210> 513
 <211> 46
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 513
ggtgacactt gccagtcaga tgtggatgaa tgcagtgcta ggaggg 46

<210> 514
<211> 2690
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 2039-2065
<223> unknown base

<400> 514
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agttgggtct ccgtgtttca ggccggtcc cccttcctgg tctcccttct 200
cccgtgggc cggtttatcg ggaggagatt gtcttcacag gctagcaatt 250
ggacttttga tgatgtttga ccagcggca ggaatagcag gcaacgtgat 300
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cattttggag caggaattcc aatcatgtct gtgatgggtg tgagaaagaa 400
ggtgacacgg aaatgggaga aactcccagg caggaacacc ttttgctgtg 450
atggccgct catgatggcc cggcaaaagg gcattttcta cctgaccctt 500
ttcctcatcc tggggacatg tacactcttc ttgcctttg agtgccgcta 550
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agaagctacc aatggtgcgg tgcccaggg ccagcgacca ccgcctcgta 750
tcaagaattt ccagataaac aaccagattg tgaaactgaa atactgttac 800
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atctttgaaa attggcttct tggagacatt gaaagaaact cctggaactg 1050
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atggcaatat tgtgaagaac tgctgtgaag tgctgtgtgg ccccttgccc 1250
cccagtgtgc tggatcgaag gggatatttg ccaactggagg aaagtggaag 1300
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caaggcagtg gcagaagatg tcagtcacct ctgataactg gaaaaatggg 1700
tctcttgggc cctggcactg gttctccatg gcctcagcca cagggtcccc 1750
ttggaccccc tctcttcctt ccagatccca gccctcctgc ttgggggtcac 1800
tgggtctcatt ctggggctaa aagtttttga gactggctca aatcctccca 1850
agctgctgca cgtgctgagt ccagaggcag tcacagagac ctctggccag 1900
gggatcctaa ctgggttctt ggggtcttca ggactgaaga ggaggagag 1950
tgggggtcaga agattctcct ggccaccaag tgccagcatt gccacaaat 2000
ccttttagga atgggacagg taccttcac ttgttgann nnnnnnnnn 2050
nnnnnnnnnn nnnnttggt tttcttttg actcctgctc ccattaggag 2100
caggaatggc agtaataaaa gtctgcactt tggtcatttc ttttctcag 2150
aggaagcccg agtgctcact taaacactat cccctcagac tccctgtgtg 2200
aggcctgcag aggccctgaa tgcacaaatg ggaaaccaag gcacagagag 2250
gctctcctct cctctcctct ccccgatgt accctcaaaa aaaaaaaaaat 2300
gctaaccagt tcttcatta agcctcggct gaggtaggga aagcccagca 2350
ctgctgccct ctgggtaac tcaccctaag gcctcgccc acctctggt 2400
atggtaacca cactgggggc ttcctccaag cccgctctt ccagcacttc 2450
caccggcaga gtcccagagc cacttcaccc tgggggtggg ctgtggcccc 2500
cagtcagctc tgctcaggac ctgctctatt tcagggaaga agatttatgt 2550

attatatgtg gctatatttc cttaggcacc tgtgttttcc tctttctaag 2600
ccagggtcct gtctggatga cttatgcggt gggggagtgt aaaccggaac 2650
ttttcatcta tttgaaggcg attaaactgt gtctaatagca 2690

<210> 515
<211> 364
<212> PRT
<213> Homo sapiens

<400> 515
Met Ser Val Met Val Val Arg Lys Lys Val Thr Arg Lys Trp Glu
1 5 10 15
Lys Leu Pro Gly Arg Asn Thr Phe Cys Cys Asp Gly Arg Val Met
20 25 30
Met Ala Arg Gln Lys Gly Ile Phe Tyr Leu Thr Leu Phe Leu Ile
35 40 45
Leu Gly Thr Cys Thr Leu Phe Phe Ala Phe Glu Cys Arg Tyr Leu
50 55 60
Ala Val Gln Leu Ser Pro Ala Ile Pro Val Phe Ala Ala Met Leu
65 70 75
Phe Leu Phe Ser Met Ala Thr Leu Leu Arg Thr Ser Phe Ser Asp
80 85 90
Pro Gly Val Ile Pro Arg Ala Leu Pro Asp Glu Ala Ala Phe Ile
95 100 105
Glu Met Glu Ile Glu Ala Thr Asn Gly Ala Val Pro Gln Gly Gln
110 115 120
Arg Pro Pro Pro Arg Ile Lys Asn Phe Gln Ile Asn Asn Gln Ile
125 130 135
Val Lys Leu Lys Tyr Cys Tyr Thr Cys Lys Ile Phe Arg Pro Pro
140 145 150
Arg Ala Ser His Cys Ser Ile Cys Asp Asn Cys Val Glu Arg Phe
155 160 165
Asp His His Cys Pro Trp Val Gly Asn Cys Val Gly Lys Arg Asn
170 175 180
Tyr Arg Tyr Phe Tyr Leu Phe Ile Leu Ser Leu Ser Leu Leu Thr
185 190 195
Ile Tyr Val Phe Ala Phe Asn Ile Val Tyr Val Ala Leu Lys Ser
200 205 210
Leu Lys Ile Gly Phe Leu Glu Thr Leu Lys Glu Thr Pro Gly Thr
215 220 225
Val Leu Glu Val Leu Ile Cys Phe Phe Thr Leu Trp Ser Val Val

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 230 | | 235 | | 240 |
| Gly Leu Thr Gly | Phe His Thr Phe Leu | Val Ala Leu Asn Gln Thr | | | |
| | 245 | 250 | 255 | | |
| Thr Asn Glu Asp | Ile Lys Gly Ser Trp | Thr Gly Lys Asn Arg Val | | | |
| | 260 | 265 | 270 | | |
| Gln Asn Pro Tyr | Ser His Gly Asn Ile | Val Lys Asn Cys Cys Glu | | | |
| | 275 | 280 | 285 | | |
| Val Leu Cys Gly | Pro Leu Pro Pro Ser | Val Leu Asp Arg Arg Gly | | | |
| | 290 | 295 | 300 | | |
| Ile Leu Pro Leu | Glu Glu Ser Gly Ser | Arg Pro Pro Ser Thr Gln | | | |
| | 305 | 310 | 315 | | |
| Glu Thr Ser Ser | Ser Leu Leu Pro Gln | Ser Pro Ala Pro Thr Glu | | | |
| | 320 | 325 | 330 | | |
| His Leu Asn Ser | Asn Glu Met Pro Glu | Asp Ser Ser Thr Pro Glu | | | |
| | 335 | 340 | 345 | | |
| Glu Met Pro Pro | Pro Glu Pro Pro Glu | Pro Pro Gln Glu Ala Ala | | | |
| | 350 | 355 | 360 | | |
| Glu Ala Glu Lys | | | | | |

<210> 516
 <211> 255
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 36, 38, 88, 118, 135, 193, 213, 222
 <223> unknown base

<400> 516
 aaaaccctgt attttttaca atgcaaatac acaatnancc tggaggtcct 50
 tgaattaggt attatagga tgggtggggtt gatttttntt cctggaggct 100
 tttggctttg gactctcnct ttctcccaca gagcncttcg accatcactg 150
 cccctgggtg gggaattgtg ttggaaagag gaactaccgc tanttctacc 200
 tcttcacctc ttntctctcc cncctcacia tctatgtctt cgccttcaac 250
 atcgt 255

<210> 517
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 517

caacgtgatt tcaaagctgg gctc 24

<210> 518

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 518

gcctcgatc aagaatttcc 20

<210> 519

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 519

agtggaagtc gacctccc 18

<210> 520

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 520

ctcacctgaa atctctcata gccc 24

<210> 521

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 521

cgcaaaaccc attttgggag caggaattcc aatcatgtct gtgatgggtg 50

<210> 522

<211> 1679

<212> DNA

<213> Homo sapiens

<400> 522

gttgtgtcct tcagcaaaac agtggattta aatctccttg cacaagcttg 50

agagcaacac aatctatcag gaaagaaaga aagaaaaaaaa ccgaacctga 100

caaaaaagaa gaaaaagaag aagaaaaaaa atcatgaaaa ccatccagcc 150
aaaaatgcac aattctatct cttgggcaat cttcacgggg ctggctgctc 200
tgtgtctctt ccaaggagtg cccgtgcgca gcggagatgc caccttcccc 250
aaagctatgg acaacgtgac ggtccggcag ggggagagcg ccaccctcag 300
gtgcactatt gacaaccggg tcacccgggt ggcttggtta aaccgcagca 350
ccatcctcta tgctgggaat gacaagtggg gcctggatcc tcgctgggtc 400
cttctgagca acacccaaac gcagtacagc atcgagatcc agaacgtgga 450
tgtgtatgac gagggccctt acacctgctc ggtgcagaca gacaaccacc 500
caaagacctc tagggtccac ctcatgtgac aagtatctcc caaaattgta 550
gagatttctt cagatatctc cattaatgaa gggaacaata ttagcctcac 600
ctgcatagca actggttagac cagagcctac ggttacttgg agacacatct 650
ctcccaaagc ggttggtctt gtgagtgaag acgaatactt ggaaattcag 700
ggcatcaccg gggagcagtc aggggactac gagtgcagtg cctccaatga 750
cgtggccgcg cccgtggtac ggagagtaaa ggtcacctg aactatccac 800
catacatttc agaagccaag ggtacaggtg tccccgtggg acaaaagggg 850
aactgcagtg gtgaagctc agcagtcacc tcagcagaat tccagtggta 900
caaggatgac aaaagactga ttgaaggaaa gaaaggggtg aaagtggaaa 950
acagaccttt cctctcaaaa ctcatcttct tcaatgtctc tgaacatgac 1000
tatgggaact acacttgctg ggctccaac aagctggggc acaccaatgc 1050
cagcatcatg ctatttggtc caggcgccgt cagcgaggtg agcaacggca 1100
cgtcgaggag ggcaggctgc gtctggctgc tgcctcttct ggtcttgca 1150
ctgcttctca aattttgatg tgagtgccac ttccccaccc gggaaaggct 1200
gccgccacca ccaccaccaa cacaacagca atggcaacac cgacagcaac 1250
caatcagata tatacaaag aaattagaag aaacacagcc tcatgggaca 1300
gaaatttgag ggaggggaac aaagaatact ttggggggaa aagagtttta 1350
aaaaagaaat tgaaaattgc cttgcagata tttaggtaca atggagtttt 1400
cttttcccaa acgggaagaa cacagcacac ccggcttgga cccactgcaa 1450
gctgcatcgt gcaacctctt tgggtgccagt gtgggcaagg gctcagcctc 1500
tctgcccaca gagtggcccc acgtggaaca ttctggagct ggccatccca 1550

aattcaatca gtccatagag acgaacagaa tgagaccttc cggcccaagc 1600
 gtggcgctgc gggcactttg gtagactgtg ccaccaoggc gtgtgttgtg 1650
 aaacgtgaaa taaaaagagc aaaaaaaaaa 1679

<210> 523
 <211> 344
 <212> PRT
 <213> Homo sapiens

<400> 523
 Met Lys Thr Ile Gln Pro Lys Met His Asn Ser Ile Ser Trp Ala
 1 5 10 15
 Ile Phe Thr Gly Leu Ala Ala Leu Cys Leu Phe Gln Gly Val Pro
 20 25 30
 Val Arg Ser Gly Asp Ala Thr Phe Pro Lys Ala Met Asp Asn Val
 35 40 45
 Thr Val Arg Gln Gly Glu Ser Ala Thr Leu Arg Cys Thr Ile Asp
 50 55 60
 Asn Arg Val Thr Arg Val Ala Trp Leu Asn Arg Ser Thr Ile Leu
 65 70 75
 Tyr Ala Gly Asn Asp Lys Trp Cys Leu Asp Pro Arg Val Val Leu
 80 85 90
 Leu Ser Asn Thr Gln Thr Gln Tyr Ser Ile Glu Ile Gln Asn Val
 95 100 105
 Asp Val Tyr Asp Glu Gly Pro Tyr Thr Cys Ser Val Gln Thr Asp
 110 115 120
 Asn His Pro Lys Thr Ser Arg Val His Leu Ile Val Gln Val Ser
 125 130 135
 Pro Lys Ile Val Glu Ile Ser Ser Asp Ile Ser Ile Asn Glu Gly
 140 145 150
 Asn Asn Ile Ser Leu Thr Cys Ile Ala Thr Gly Arg Pro Glu Pro
 155 160 165
 Thr Val Thr Trp Arg His Ile Ser Pro Lys Ala Val Gly Phe Val
 170 175 180
 Ser Glu Asp Glu Tyr Leu Glu Ile Gln Gly Ile Thr Arg Glu Gln
 185 190 195
 Ser Gly Asp Tyr Glu Cys Ser Ala Ser Asn Asp Val Ala Ala Pro
 200 205 210
 Val Val Arg Arg Val Lys Val Thr Val Asn Tyr Pro Pro Tyr Ile
 215 220 225
 Ser Glu Ala Lys Gly Thr Gly Val Pro Val Gly Gln Lys Gly Thr

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| | 230 | | 235 | | 240 |
| Leu Gln Cys Glu | Ala Ser Ala Val Pro | Ser Ala Glu Phe Gln Trp | | | |
| | 245 | 250 | | 255 | |
| Tyr Lys Asp Asp | Lys Arg Leu Ile Glu | Gly Lys Lys Gly Val Lys | | | |
| | 260 | 265 | | 270 | |
| Val Glu Asn Arg | Pro Phe Leu Ser Lys | Leu Ile Phe Phe Asn Val | | | |
| | 275 | 280 | | 285 | |
| Ser Glu His Asp | Tyr Gly Asn Tyr Thr | Cys Val Ala Ser Asn Lys | | | |
| | 290 | 295 | | 300 | |
| Leu Gly His Thr | Asn Ala Ser Ile Met | Leu Phe Gly Pro Gly Ala | | | |
| | 305 | 310 | | 315 | |
| Val Ser Glu Val | Ser Asn Gly Thr Ser | Arg Arg Ala Gly Cys Val | | | |
| | 320 | 325 | | 330 | |
| Trp Leu Leu Pro | Leu Leu Val Leu His | Leu Leu Leu Lys Phe | | | |
| | 335 | 340 | | | |

<210> 524
 <211> 503
 <212> DNA
 <213> Homo sapiens

<400> 524
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 tgggcaatct tcacggggct ggctgctctg tgtctcttcc aaggagtgcc 100
 cgtgcgcagc ggagatgcc a cttccccc aa agctatggac aacgtgacgg 150
 tccggcaggg ggagagcgcc accctcaggt gcactattga caaccgggtc 200
 acccggtgg cctgggtaaa ccgcagcacc atcctctatg ctgggaatga 250
 caagtgggtc ctggatcctc gcgtggctct tctgagcaac acccaaacgc 300
 agtacagcat cgagatccag aacgtggatg tgtatgacga gggcccttac 350
 acctgctcgg tgcagacaga caaccacca aagacctcta gggccacct 400
 cattgtgcaa gtatctccca aaattgtaga gatttcttca gatatctcca 450
 ttaatgaagg gaacaatatt agcctcacct gcatagcaac tggtagacca 500
 gag 503

<210> 525
 <211> 2602
 <212> DNA
 <213> Homo sapiens

<400> 525
 atggctggtg acggcggggc cgggcagggg accggggccg cgccccggga 50

| | | | | | |
|-------------|-------------|-------------|------------|-------------|------|
| gcggggccagc | tgccggggagc | cctgaatcac | gccttgccc | gactccacca | 100 |
| tgaacgtcgc | gctgcaggag | ctgggagctg | gcagcaacgt | gggattccag | 150 |
| aaggggacaa | gacagctggt | aggctcacgc | acgcagctgg | agctgggtctt | 200 |
| agcaggtgcc | tctctactgc | tggctgcact | gcttctgggc | tgcttgtgg | 250 |
| ccctaggggt | ccagtaccac | agagacccat | cccacagcac | ctgccttaca | 300 |
| gaggcctgca | ttcgagtggc | tggaaaaatc | ctggagtccc | tggaccgagg | 350 |
| ggtgagcccc | tgtgaggact | tttaccagtt | ctcctgtggg | ggctggattc | 400 |
| ggaggaaccc | cctgcccgat | gggcgttctc | gctggaacac | cttcaacagc | 450 |
| ctctgggacc | aaaaccaggc | catactgaag | cacctgcttg | aaaacaccac | 500 |
| cttcaactcc | agcagtgaag | ctgagcagaa | gacacagcgc | ttctacctat | 550 |
| cttgccata | ggtggagcgc | attgaggagc | tgggagccca | gccactgaga | 600 |
| gacctcattg | agaagattgg | tggttggaac | attacggggc | cctgggacca | 650 |
| ggacaacttt | atggagggtgt | tgaaggcagt | agcagggacc | tacaggggcca | 700 |
| ccccattctt | caccgtctac | atcagtgccg | actctaagag | ttccaacagc | 750 |
| aatgttatcc | aggtggacca | gtctgggctc | tttctgccct | ctcgggatta | 800 |
| ctacttaaac | agaactgcca | atgagaaagt | gctcactgcc | tatctggatt | 850 |
| acatggagga | actggggatg | ctgctgggtg | ggcggcccac | ctccacgagg | 900 |
| gagcagatgc | agcagggtgt | ggagttggag | atacagctgg | ccaacatcac | 950 |
| agtgccccag | gaccagcggc | gcgacgagga | gaagatctac | cacaagatga | 1000 |
| gcatttcgga | gctgcaggct | ctggcgccct | ccatggactg | gcttgagttc | 1050 |
| ctgtctttct | tgtgtcacc | attggagttg | agtgactctg | agcctgtgggt | 1100 |
| ggtgtatggg | atggattatt | tgcagcagggt | gtcagagctc | atcaaccgca | 1150 |
| cggaaccaag | catcctgaac | aattacctga | tctggaacct | ggtgcaaaag | 1200 |
| acaacctcaa | gcctggaccg | acgctttgag | tctgcacaag | agaagctgct | 1250 |
| ggagaccctc | tatggcacta | agaagtctctg | tgtgccgagg | tggcagacct | 1300 |
| gcatctccaa | cacggatgac | gcccttggct | ttgctttggg | gtcactcttc | 1350 |
| gtgaaggcca | cgtttgaccg | gcaaagcaaa | gaaattgcag | aggggatgat | 1400 |
| cagcgaaatc | cggaccgcat | ttgaggaggc | cctgggacag | ctggtttgga | 1450 |
| tggatgagaa | gacccgccag | gcagccaagg | agaaagcaga | tgccatctat | 1500 |

gatatgattg gtttcccaga ctttatcctg gagcccaaag agctggatga 1550
 tgtttatgac gggtagcaaa tttctgaaga ttctttcttc caaaacatgt 1600
 tgaatttgta caacttctct gccaaaggta tggctgacca gctccgcaag 1650
 cctcccagcc gagaccagtg gagcatgacc ccccagacag tgaatgccta 1700
 ctaccttcca actaagaatg agatcgtctt ccccgtggc atcctgcagg 1750
 cccccttcta tgcccgaac caccccaagg ccctgaactt cgggtggcatc 1800
 ggtgtggtca tgggccatga gttgacgcat gcctttgatg accaagggcg 1850
 cgagtatgac aaagaaggga acctgcggcc ctggtggcag aatgagtccc 1900
 tggcagcctt ccggaaccac acggcctgca tggaggaaca gtacaatcaa 1950
 taccaggtca atggggagag gctcaacggc cgccagacgc tgggggagaa 2000
 cattactgac aacggggggc tgaaggctgc ctacaatgct taaaaagcat 2050
 ggctgagaaa gcatggggag gagcagcaac tgccagccgt ggggctcacc 2100
 aaccaccagc tcttcttcgt gggatttgcc cagggtgtgt gctcgggtccg 2150
 cacaccagag agctctcacg aggggctggt gaccgacccc cacagccctg 2200
 cccgcttccg cgtgctgggc actctctcca actcccgta ctctctgcgg 2250
 cacttcggct gccctgtcgg ctcccccatg aaccagggc agctgtgtga 2300
 ggtgtggtag acctggatca ggggagaaat ggccagctgt caccagacct 2350
 ggggcagctc tcctgacaaa gctgtttgct cttgggttgaggaggaagcaa 2400
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 cagaccctcc tcaatcacca cattgtgcct ctgctttggg ggtgccctg 2500
 cctccagcag agccccacc attcactgtg acatctttcc gtgtcaccct 2550
 gcctggaaga ggtctgggtg gggaggccag ttcccatagg aaggagtctg 2600
 cc 2602

<210> 526

<211> 736

<212> PRT

<213> Homo sapiens

<400> 526

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Val | Ala | Leu | Gln | Glu | Leu | Gly | Ala | Gly | Ser | Asn | Val | Gly |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| Phe | Gln | Lys | Gly | Thr | Arg | Gln | Leu | Leu | Gly | Ser | Arg | Thr | Gln | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Glu | Leu | Val | Leu | Ala | Gly | Ala | Ser | Leu | Leu | Leu | Ala | Ala | Leu | Leu | | 35 | 40 | 45 |
| Leu | Gly | Cys | Leu | Val | Ala | Leu | Gly | Val | Gln | Tyr | His | Arg | Asp | Pro | | 50 | 55 | 60 |
| Ser | His | Ser | Thr | Cys | Leu | Thr | Glu | Ala | Cys | Ile | Arg | Val | Ala | Gly | | 65 | 70 | 75 |
| Lys | Ile | Leu | Glu | Ser | Leu | Asp | Arg | Gly | Val | Ser | Pro | Cys | Glu | Asp | | 80 | 85 | 90 |
| Phe | Tyr | Gln | Phe | Ser | Cys | Gly | Gly | Trp | Ile | Arg | Arg | Asn | Pro | Leu | | 95 | 100 | 105 |
| Pro | Asp | Gly | Arg | Ser | Arg | Trp | Asn | Thr | Phe | Asn | Ser | Leu | Trp | Asp | | 110 | 115 | 120 |
| Gln | Asn | Gln | Ala | Ile | Leu | Lys | His | Leu | Leu | Glu | Asn | Thr | Thr | Phe | | 125 | 130 | 135 |
| Asn | Ser | Ser | Ser | Glu | Ala | Glu | Gln | Lys | Thr | Gln | Arg | Phe | Tyr | Leu | | 140 | 145 | 150 |
| Ser | Cys | Leu | Gln | Val | Glu | Arg | Ile | Glu | Glu | Leu | Gly | Ala | Gln | Pro | | 155 | 160 | 165 |
| Leu | Arg | Asp | Leu | Ile | Glu | Lys | Ile | Gly | Gly | Trp | Asn | Ile | Thr | Gly | | 170 | 175 | 180 |
| Pro | Trp | Asp | Gln | Asp | Asn | Phe | Met | Glu | Val | Leu | Lys | Ala | Val | Ala | | 185 | 190 | 195 |
| Gly | Thr | Tyr | Arg | Ala | Thr | Pro | Phe | Phe | Thr | Val | Tyr | Ile | Ser | Ala | | 200 | 205 | 210 |
| Asp | Ser | Lys | Ser | Ser | Asn | Ser | Asn | Val | Ile | Gln | Val | Asp | Gln | Ser | | 215 | 220 | 225 |
| Gly | Leu | Phe | Leu | Pro | Ser | Arg | Asp | Tyr | Tyr | Leu | Asn | Arg | Thr | Ala | | 230 | 235 | 240 |
| Asn | Glu | Lys | Val | Leu | Thr | Ala | Tyr | Leu | Asp | Tyr | Met | Glu | Glu | Leu | | 245 | 250 | 255 |
| Gly | Met | Leu | Leu | Gly | Gly | Arg | Pro | Thr | Ser | Thr | Arg | Glu | Gln | Met | | 260 | 265 | 270 |
| Gln | Gln | Val | Leu | Glu | Leu | Glu | Ile | Gln | Leu | Ala | Asn | Ile | Thr | Val | | 275 | 280 | 285 |
| Pro | Gln | Asp | Gln | Arg | Arg | Asp | Glu | Glu | Lys | Ile | Tyr | His | Lys | Met | | 290 | 295 | 300 |
| Ser | Ile | Ser | Glu | Leu | Gln | Ala | Leu | Ala | Pro | Ser | Met | Asp | Trp | Leu | | 305 | 310 | 315 |
| Glu | Phe | Leu | Ser | Phe | Leu | Leu | Ser | Pro | Leu | Glu | Leu | Ser | Asp | Ser | | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 320 | 325 | 330 |
| Glu Pro Val Val Val Tyr Gly Met Asp | Tyr Leu Gln Gln Val Ser | |
| 335 | 340 | 345 |
| Glu Leu Ile Asn Arg Thr Glu Pro Ser | Ile Leu Asn Asn Tyr Leu | |
| 350 | 355 | 360 |
| Ile Trp Asn Leu Val Gln Lys Thr Thr | Ser Ser Leu Asp Arg Arg | |
| 365 | 370 | 375 |
| Phe Glu Ser Ala Gln Glu Lys Leu Leu | Glu Thr Leu Tyr Gly Thr | |
| 380 | 385 | 390 |
| Lys Lys Ser Cys Val Pro Arg Trp Gln | Thr Cys Ile Ser Asn Thr | |
| 395 | 400 | 405 |
| Asp Asp Ala Leu Gly Phe Ala Leu Gly | Ser Leu Phe Val Lys Ala | |
| 410 | 415 | 420 |
| Thr Phe Asp Arg Gln Ser Lys Glu Ile | Ala Glu Gly Met Ile Ser | |
| 425 | 430 | 435 |
| Glu Ile Arg Thr Ala Phe Glu Glu Ala | Leu Gly Gln Leu Val Trp | |
| 440 | 445 | 450 |
| Met Asp Glu Lys Thr Arg Gln Ala Ala | Lys Glu Lys Ala Asp Ala | |
| 455 | 460 | 465 |
| Ile Tyr Asp Met Ile Gly Phe Pro Asp | Phe Ile Leu Glu Pro Lys | |
| 470 | 475 | 480 |
| Glu Leu Asp Asp Val Tyr Asp Gly Tyr | Glu Ile Ser Glu Asp Ser | |
| 485 | 490 | 495 |
| Phe Phe Gln Asn Met Leu Asn Leu Tyr | Asn Phe Ser Ala Lys Val | |
| 500 | 505 | 510 |
| Met Ala Asp Gln Leu Arg Lys Pro Pro | Ser Arg Asp Gln Trp Ser | |
| 515 | 520 | 525 |
| Met Thr Pro Gln Thr Val Asn Ala Tyr | Tyr Leu Pro Thr Lys Asn | |
| 530 | 535 | 540 |
| Glu Ile Val Phe Pro Ala Gly Ile Leu | Gln Ala Pro Phe Tyr Ala | |
| 545 | 550 | 555 |
| Arg Asn His Pro Lys Ala Leu Asn Phe | Gly Gly Ile Gly Val Val | |
| 560 | 565 | 570 |
| Met Gly His Glu Leu Thr His Ala Phe | Asp Asp Gln Gly Arg Glu | |
| 575 | 580 | 585 |
| Tyr Asp Lys Glu Gly Asn Leu Arg Pro | Trp Trp Gln Asn Glu Ser | |
| 590 | 595 | 600 |
| Leu Ala Ala Phe Arg Asn His Thr Ala | Cys Met Glu Glu Gln Tyr | |
| 605 | 610 | 615 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Gln | Tyr | Gln | Val | Asn | Gly | Glu | Arg | Leu | Asn | Gly | Arg | Gln | Thr | 620 | 625 | 630 |
| Leu | Gly | Glu | Asn | Ile | Thr | Asp | Asn | Gly | Gly | Leu | Lys | Ala | Ala | Tyr | 635 | 640 | 645 |
| Asn | Ala | Tyr | Lys | Ala | Trp | Leu | Arg | Lys | His | Gly | Glu | Glu | Gln | Gln | 650 | 655 | 660 |
| Leu | Pro | Ala | Val | Gly | Leu | Thr | Asn | His | Gln | Leu | Phe | Phe | Val | Gly | 665 | 670 | 675 |
| Phe | Ala | Gln | Val | Trp | Cys | Ser | Val | Arg | Thr | Pro | Glu | Ser | Ser | His | 680 | 685 | 690 |
| Glu | Gly | Leu | Val | Thr | Asp | Pro | His | Ser | Pro | Ala | Arg | Phe | Arg | Val | 695 | 700 | 705 |
| Leu | Gly | Thr | Leu | Ser | Asn | Ser | Arg | Asp | Phe | Leu | Arg | His | Phe | Gly | 710 | 715 | 720 |
| Cys | Pro | Val | Gly | Ser | Pro | Met | Asn | Pro | Gly | Gln | Leu | Cys | Glu | Val | 725 | 730 | 735 |

Trp

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ccaacttccc tccccagtg cct 23

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<210> 579
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<210> 581
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<210> 582
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ccaggatacg acatgctgca 20

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<210> 588

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<211> 23

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<210> 611
<211> 2840
<212> DNA
<213> Homo Sapien

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accacccac caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaatc 200
ctgtggcgcg ccgcctggtt cccgggaaga ctgccagca ccagggggtg 250
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<210> 612
 <211> 352
 <212> PRT
 <213> Homo Sapien

<400> 612

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Leu | Leu | Val | Gln | Gly | Ala | Cys | Cys | Ser | Asn | Gln | Trp | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Ala | Val | Leu | Leu | Ser | Leu | Cys | Cys | Leu | Leu | Pro | Ser | Cys | Leu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Pro | Ala | Gly | Gln | Ser | Val | Asp | Phe | Pro | Trp | Ala | Ala | Val | Asp | Asn |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Met | Met | Val | Arg | Lys | Gly | Asp | Thr | Ala | Val | Leu | Arg | Cys | Tyr | Leu |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Glu | Asp | Gly | Ala | Ser | Lys | Gly | Ala | Trp | Leu | Asn | Arg | Ser | Ser | Ile |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Ile | Phe | Ala | Gly | Gly | Asp | Lys | Trp | Ser | Val | Asp | Pro | Arg | Val | Ser |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Ile | Ser | Thr | Leu | Asn | Lys | Arg | Asp | Tyr | Ser | Leu | Gln | Ile | Gln | Asn |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Val | Asp | Val | Thr | Asp | Asp | Gly | Pro | Tyr | Thr | Cys | Ser | Val | Gln | Thr |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Gln | His | Thr | Pro | Arg | Thr | Met | Gln | Val | His | Leu | Thr | Val | Gln | Val |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Pro | Pro | Lys | Ile | Tyr | Asp | Ile | Ser | Asn | Asp | Met | Thr | Val | Asn | Glu |
| | | | 140 | | | | | | 145 | | | | | 150 |
| Gly | Thr | Asn | Val | Thr | Leu | Thr | Cys | Leu | Ala | Thr | Gly | Lys | Pro | Glu |
| | | | 155 | | | | | | 160 | | | | | 165 |
| Pro | Ser | Ile | Ser | Trp | Arg | His | Ile | Ser | Pro | Ser | Ala | Lys | Pro | Phe |
| | | | 170 | | | | | | 175 | | | | | 180 |
| Glu | Asn | Gly | Gln | Tyr | Leu | Asp | Ile | Tyr | Gly | Ile | Thr | Arg | Asp | Gln |
| | | | 185 | | | | | | 190 | | | | | 195 |
| Ala | Gly | Glu | Tyr | Glu | Cys | Ser | Ala | Glu | Asn | Ala | Val | Ser | Phe | Pro |
| | | | 200 | | | | | | 205 | | | | | 210 |
| Asp | Val | Arg | Lys | Val | Lys | Val | Val | Val | Asn | Phe | Ala | Pro | Thr | Ile |
| | | | 215 | | | | | | 220 | | | | | 225 |
| Gln | Glu | Ile | Lys | Ser | Gly | Thr | Val | Thr | Pro | Gly | Arg | Ser | Gly | Leu |

| | | |
|-------------------------------------|-------------------------|-----|
| 230 | 235 | 240 |
| Ile Arg Cys Glu Gly Ala Gly Val Pro | Pro Pro Ala Phe Glu Trp | |
| 245 | 250 | 255 |
| Tyr Lys Gly Glu Lys Lys Leu Phe Asn | Gly Gln Gln Gly Ile Ile | |
| 260 | 265 | 270 |
| Ile Gln Asn Phe Ser Thr Arg Ser Ile | Leu Thr Val Thr Asn Val | |
| 275 | 280 | 285 |
| Thr Gln Glu His Phe Gly Asn Tyr Thr | Cys Val Ala Ala Asn Lys | |
| 290 | 295 | 300 |
| Leu Gly Thr Thr Asn Ala Ser Leu Pro | Leu Asn Pro Pro Ser Thr | |
| 305 | 310 | 315 |
| Ala Gln Tyr Gly Ile Thr Gly Ser Ala | Asp Val Leu Phe Ser Cys | |
| 320 | 325 | 330 |
| Trp Tyr Leu Val Leu Thr Leu Ser Ser | Phe Thr Ser Ile Phe Tyr | |
| 335 | 340 | 345 |
| Leu Lys Asn Ala Ile Leu Gln | | |
| 350 | | |

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 <211> 1797
 <212> DNA
 <213> Homo Sapien

<400> 613
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 aaataagaaa atttcaagg aggaacgagct cttgagttag acccaacaag 150
 ctgcttttca ccaaattgca atggagcctt tcgaaatcaa tgttccaaag 200
 cccaagagga gaaatggggt gaacttctcc ctagctgtgg tggatcatcta 250
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<210> 614

<211> 520

<212> PRT

<213> Homo Sapien

<400> 614

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Asn | Lys | Lys | Ile | Leu | Lys | Glu | Asp | Glu | Leu | Leu | Ser | Glu |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Thr | Gln | Gln | Ala | Ala | Phe | His | Gln | Ile | Ala | Met | Glu | Pro | Phe | Glu |
| | | | 20 | | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asn | Val | Pro | Lys | Pro | Lys | Arg | Arg | Asn | Gly | Val | Asn | Phe | Ser | 35 | 40 | 45 |
| Leu | Ala | Val | Val | Val | Ile | Tyr | Leu | Ile | Leu | Leu | Thr | Ala | Gly | Ala | 50 | 55 | 60 |
| Gly | Leu | Leu | Val | Val | Gln | Val | Leu | Asn | Leu | Gln | Ala | Arg | Leu | Arg | 65 | 70 | 75 |
| Val | Leu | Glu | Met | Tyr | Phe | Leu | Asn | Asp | Thr | Leu | Ala | Ala | Glu | Asp | 80 | 85 | 90 |
| Ser | Pro | Ser | Phe | Ser | Leu | Leu | Gln | Ser | Ala | His | Pro | Gly | Glu | His | 95 | 100 | 105 |
| Leu | Ala | Gln | Gly | Ala | Ser | Arg | Leu | Gln | Val | Leu | Gln | Ala | Gln | Leu | 110 | 115 | 120 |
| Thr | Trp | Val | Arg | Val | Ser | His | Glu | His | Leu | Leu | Gln | Arg | Val | Asp | 125 | 130 | 135 |
| Asn | Phe | Thr | Gln | Asn | Pro | Gly | Met | Phe | Arg | Ile | Lys | Gly | Glu | Gln | 140 | 145 | 150 |
| Gly | Ala | Pro | Gly | Leu | Gln | Gly | His | Lys | Gly | Ala | Met | Gly | Met | Pro | 155 | 160 | 165 |
| Gly | Ala | Pro | Gly | Pro | Pro | Gly | Pro | Pro | Ala | Glu | Lys | Gly | Ala | Lys | 170 | 175 | 180 |
| Gly | Ala | Met | Gly | Arg | Asp | Gly | Ala | Thr | Gly | Pro | Ser | Gly | Pro | Gln | 185 | 190 | 195 |
| Gly | Pro | Pro | Gly | Val | Lys | Gly | Glu | Ala | Gly | Leu | Gln | Gly | Pro | Gln | 200 | 205 | 210 |
| Gly | Ala | Pro | Gly | Lys | Gln | Gly | Ala | Thr | Gly | Thr | Pro | Gly | Pro | Gln | 215 | 220 | 225 |
| Gly | Glu | Lys | Gly | Ser | Lys | Gly | Asp | Gly | Gly | Leu | Ile | Gly | Pro | Lys | 230 | 235 | 240 |
| Gly | Glu | Thr | Gly | Thr | Lys | Gly | Glu | Lys | Gly | Asp | Leu | Gly | Leu | Pro | 245 | 250 | 255 |
| Gly | Ser | Lys | Gly | Asp | Arg | Gly | Met | Lys | Gly | Asp | Ala | Gly | Val | Met | 260 | 265 | 270 |
| Gly | Pro | Pro | Gly | Ala | Gln | Gly | Ser | Lys | Gly | Asp | Phe | Gly | Arg | Pro | 275 | 280 | 285 |
| Gly | Pro | Pro | Gly | Leu | Ala | Gly | Phe | Pro | Gly | Ala | Lys | Gly | Asp | Gln | 290 | 295 | 300 |
| Gly | Gln | Pro | Gly | Leu | Gln | Gly | Val | Pro | Gly | Pro | Pro | Gly | Ala | Val | 305 | 310 | 315 |
| Gly | His | Pro | Gly | Ala | Lys | Gly | Glu | Pro | Gly | Ser | Ala | Gly | Ser | Pro | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 320 | 325 | 330 |
| Gly Arg Ala Gly Leu Pro Gly Ser Pro | Gly Ser Pro Gly Ala Thr | |
| 335 | 340 | 345 |
| Gly Leu Lys Gly Ser Lys Gly Asp Thr | Gly Leu Gln Gly Gln Gln | |
| 350 | 355 | 360 |
| Gly Arg Lys Gly Glu Ser Gly Val Pro | Gly Pro Ala Gly Val Lys | |
| 365 | 370 | 375 |
| Gly Glu Gln Gly Ser Pro Gly Leu Ala | Gly Pro Lys Gly Ala Pro | |
| 380 | 385 | 390 |
| Gly Gln Ala Gly Gln Lys Gly Asp Gln | Gly Val Lys Gly Ser Ser | |
| 395 | 400 | 405 |
| Gly Glu Gln Gly Val Lys Gly Glu Lys | Gly Glu Arg Gly Glu Asn | |
| 410 | 415 | 420 |
| Ser Val Ser Val Arg Ile Val Gly Ser | Ser Asn Arg Gly Arg Ala | |
| 425 | 430 | 435 |
| Glu Val Tyr Tyr Ser Gly Thr Trp Gly | Thr Ile Cys Asp Asp Glu | |
| 440 | 445 | 450 |
| Trp Gln Asn Ser Asp Ala Ile Val Phe | Cys Arg Met Leu Gly Tyr | |
| 455 | 460 | 465 |
| Ser Lys Gly Arg Ala Leu Tyr Lys Val | Gly Ala Gly Thr Gly Gln | |
| 470 | 475 | 480 |
| Ile Trp Leu Asp Asn Val Gln Cys Arg | Gly Thr Glu Ser Thr Leu | |
| 485 | 490 | 495 |
| Trp Ser Cys Thr Lys Asn Ser Trp Gly | His His Asp Cys Ser His | |
| 500 | 505 | 510 |
| Glu Glu Asp Ala Gly Val Glu Cys Ser | Val | |
| 515 | 520 | |

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 <212> DNA
 <213> Homo Sapien

<400> 615
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 aaaagccaaa atgaaactga tggtacttgt tttcaccatt gggctaactt 200
 tgctgctagg agttcaagcc atgcctgcaa atcgctctc ttgctacaga 250
 aagatactaa aagatcacia ctgtcacaac cttccggaag gagtagctga 300

cctgacacag attgatgtca atgtccagga tcatttctgg gatgggaagg 350
 gatgtgagat gatctgttac tgcaacttca gcgaattgct ctgctgcca 400
 aaagacgttt tctttggacc aaagatctct ttctgtattc cttgcaacaa 450
 tcaatgagaa tcttcatgta ttctggagaa caccattcct gatttcccac 500
 aaactgcact acatcagtat aactgcattt ctagtttcta tatagtgcaa 550
 tagagcatag attctataaa ttcttacttg tctaagacaa gtaaattctgt 600
 gttaaacaag tagtaataaa agttaattca atctaataaa aaaaaa 647

<210> 616
 <211> 98
 <212> PRT
 <213> Homo Sapien

<400> 616
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 20 25 30
 Lys Ile Leu Lys Asp His Asn Cys His Asn Leu Pro Glu Gly Val
 35 40 45
 Ala Asp Leu Thr Gln Ile Asp Val Asn Val Gln Asp His Phe Trp
 50 55 60
 Asp Gly Lys Gly Cys Glu Met Ile Cys Tyr Cys Asn Phe Ser Glu
 65 70 75
 Leu Leu Cys Cys Pro Lys Asp Val Phe Phe Gly Pro Lys Ile Ser
 80 85 90
 Phe Val Ile Pro Cys Asn Asn Gln
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<210> 617
 <211> 2558
 <212> DNA
 <213> Homo Sapien

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 accccgccgt ggtggttgga gggcgcgcag tagagcagca gcacaggcgc 150
 ggggtcccggg aggcgggtc tgctgcgcgc gagatgtgga atctccttca 200
 cgaaaccgac tcggctgtgg ccaccgcgcg ccgcccgcgc tggctgtgcg 250
 ctggggcgct ggtgctggcg ggtgggttct ttctcctcgg cttcctcttc 300

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 taatatgaaa gcatttttgg atgaattgaa agctgagaac atcaagaagt 400
 tcttacataa ttttacacag ataccacatt tagcaggaac agaacaaaac 450
 tttcagcttg caaagcaaat tcaatcccag tggaaagaat ttggcctgga 500
 ttctgttgag ctagctcatt atgatgtcct gttgtcctac ccaaataaga 550
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 aacacatcat tatttgaacc acctcctcca ggatatgaaa atgtttcgga 650
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Ala | Lys | Gln | Ile | Gln | Ser | Gln | Trp | Lys | Glu | Phe | Gly | Leu | |
| | | | | 95 | | | | | 100 | | | | | | 105 |
| Asp | Ser | Val | Glu | Leu | Ala | His | Tyr | Asp | Val | Leu | Leu | Ser | Tyr | Pro | |
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| Asn | Lys | Thr | His | Pro | Asn | Tyr | Ile | Ser | Ile | Ile | Asn | Glu | Asp | Gly | |
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| Asn | Glu | Ile | Phe | Asn | Thr | Ser | Leu | Phe | Glu | Pro | Pro | Pro | Pro | Gly | |
| | | | | 140 | | | | | 145 | | | | | | 150 |
| Tyr | Glu | Asn | Val | Ser | Asp | Ile | Val | Pro | Pro | Phe | Ser | Ala | Phe | Ser | |
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| Pro | Gln | Gly | Met | Pro | Glu | Gly | Asp | Leu | Val | Tyr | Val | Asn | Tyr | Ala | |
| | | | | 170 | | | | | 175 | | | | | | 180 |
| Arg | Thr | Glu | Asp | Phe | Phe | Lys | Leu | Glu | Arg | Asp | Met | Lys | Ile | Asn | |
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| Cys | Ser | Gly | Lys | Ile | Val | Ile | Ala | Arg | Tyr | Gly | Lys | Val | Phe | Arg | |
| | | | | 200 | | | | | 205 | | | | | | 210 |
| Gly | Asn | Lys | Val | Lys | Asn | Ala | Gln | Leu | Ala | Gly | Ala | Lys | Gly | Val | |
| | | | | 215 | | | | | 220 | | | | | | 225 |
| Ile | Leu | Tyr | Ser | Asp | Pro | Ala | Asp | Tyr | Phe | Ala | Pro | Gly | Val | Lys | |
| | | | | 230 | | | | | 235 | | | | | | 240 |
| Ser | Tyr | Pro | Asp | Gly | Trp | Asn | Leu | Pro | Gly | Gly | Gly | Val | Gln | Arg | |
| | | | | 245 | | | | | 250 | | | | | | 255 |
| Gly | Asn | Ile | Leu | Asn | Leu | Asn | Gly | Ala | Gly | Asp | Pro | Leu | Thr | Pro | |
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| Gly | Tyr | Pro | Ala | Asn | Glu | Tyr | Ala | Tyr | Arg | Arg | Gly | Ile | Ala | Glu | |
| | | | | 275 | | | | | 280 | | | | | | 285 |
| Ala | Val | Gly | Leu | Pro | Ser | Ile | Pro | Val | His | Pro | Ile | Gly | Tyr | Tyr | |
| | | | | 290 | | | | | 295 | | | | | | 300 |
| Asp | Ala | Gln | Lys | Leu | Leu | Glu | Lys | Met | Gly | Gly | Ser | Ala | Pro | Pro | |
| | | | | 305 | | | | | 310 | | | | | | 315 |
| Asp | Ser | Ser | Trp | Arg | Gly | Ser | Leu | Lys | Val | Pro | Tyr | Asn | Val | Gly | |
| | | | | 320 | | | | | 325 | | | | | | 330 |
| Pro | Gly | Phe | Thr | Gly | Asn | Phe | Ser | Thr | Gln | Lys | Val | Lys | Met | His | |
| | | | | 335 | | | | | 340 | | | | | | 345 |
| Ile | His | Ser | Thr | Asn | Glu | Val | Thr | Arg | Ile | Tyr | Asn | Val | Ile | Gly | |
| | | | | 350 | | | | | 355 | | | | | | 360 |
| Thr | Leu | Arg | Gly | Ala | Val | Glu | Pro | Asp | Arg | Tyr | Val | Ile | Leu | Gly | |
| | | | | 365 | | | | | 370 | | | | | | 375 |
| Gly | His | Arg | Asp | Ser | Trp | Val | Phe | Gly | Gly | Ile | Asp | Pro | Gln | Ser | |

| | 380 | | 385 | | 390 |
|-----------------|---------------------|---------------------|-----|--|-----|
| Gly Ala Ala Val | Val His Glu Ile Val | Arg Ser Phe Gly Thr | Leu | | |
| | 395 | 400 | 405 | | |
| Lys Lys Glu Gly | Trp Arg Pro Arg Arg | Thr Ile Leu Phe Ala | Ser | | |
| | 410 | 415 | 420 | | |
| Trp Asp Ala Glu | Glu Phe Gly Leu Leu | Gly Ser Thr Glu Trp | Ala | | |
| | 425 | 430 | 435 | | |
| Glu Glu Asn Ser | Arg Leu Leu Gln Glu | Arg Gly Val Ala Tyr | Ile | | |
| | 440 | 445 | 450 | | |
| Asn Ala Asp Ser | Ser Ile Glu Gly Asn | Tyr Thr Leu Arg Val | Asp | | |
| | 455 | 460 | 465 | | |
| Cys Thr Pro Leu | Met Tyr Ser Leu Val | His Asn Leu Thr Lys | Glu | | |
| | 470 | 475 | 480 | | |
| Leu Lys Ser Pro | Asp Glu Gly Phe Glu | Gly Lys Ser Leu Tyr | Glu | | |
| | 485 | 490 | 495 | | |
| Ser Trp Thr Lys | Lys Ser Pro Ser Pro | Glu Phe Ser Gly Met | Pro | | |
| | 500 | 505 | 510 | | |
| Arg Ile Ser Lys | Leu Gly Ser Gly Asn | Asp Phe Glu Val Phe | Phe | | |
| | 515 | 520 | 525 | | |
| Gln Arg Leu Gly | Ile Ala Ser Gly Arg | Ala Arg Tyr Thr Lys | Asn | | |
| | 530 | 535 | 540 | | |
| Trp Glu Thr Asn | Lys Phe Ser Gly Tyr | Pro Leu Tyr His Ser | Val | | |
| | 545 | 550 | 555 | | |
| Tyr Glu Thr Tyr | Glu Leu Val Glu Lys | Phe Tyr Asp Pro Met | Phe | | |
| | 560 | 565 | 570 | | |
| Lys Tyr His Leu | Thr Val Ala Gln Val | Arg Gly Gly Met Val | Phe | | |
| | 575 | 580 | 585 | | |
| Glu Leu Ala Asn | Ser Ile Val Leu Pro | Phe Asp Cys Arg Asp | Tyr | | |
| | 590 | 595 | 600 | | |
| Ala Val Val Leu | Arg Lys Tyr Ala Asp | Lys Ile Tyr Ser Ile | Ser | | |
| | 605 | 610 | 615 | | |
| Met Lys His Pro | Gln Glu Met Lys Thr | Tyr Ser Val Ser Phe | Asp | | |
| | 620 | 625 | 630 | | |
| Ser Leu Phe Ser | Ala Val Lys Asn Phe | Thr Glu Ile Ala Ser | Lys | | |
| | 635 | 640 | 645 | | |
| Phe Ser Glu Arg | Leu Gln Asp Phe Asp | Lys Ser Asn Pro Ile | Val | | |
| | 650 | 655 | 660 | | |
| Leu Arg Met Met | Asn Asp Gln Leu Met | Phe Leu Glu Arg Ala | Phe | | |
| | 665 | 670 | 675 | | |

Ile Asp Pro Leu Gly Leu Pro Asp Arg Pro Phe Tyr Arg His Val
680 685 690

Ile Tyr Ala Pro Ser Ser His Asn Lys Tyr Ala Gly Glu Ser Phe
695 700 705

Pro Gly Ile Tyr Asp Ala Leu Phe Asp Ile Glu Ser Lys Val Asp
710 715 720

Pro Ser Lys Ala Trp Gly Glu Val Lys Arg Gln Ile Tyr Val Ala
725 730 735

Ala Phe Thr Val Gln Ala Ala Ala Glu Thr Leu Ser Glu Val Ala
740 745 750

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Sequence for